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MODERN DRAMA AND SOME OF ITS REPRESENTATIVES.

JAMES E. MURDOCH—JOHN M'CULLOUGH—CLARA MORRIS.

MANKIND has always shown a deep interest in the drama. As far back as authentic history reaches, we find that the "mimic stage" had a place among the institutions of social life. With the progress of civilization, the field of dramatic representation has expanded, and to-day the proper understanding of a well-written and well-acted play is regarded as an evidence of culture.

With the growth of public interest in the stage, many corruptions have crept in.

Caricature, buffoonery, burlesque have been found to "draw" with the masses,—in other words, to be pecuniarily profitable, and theatrical managers, for the most part, viewing the stage as a means for money-making, have aimed to supply that sort of tragedy or comedy, burlesque, or variety show which would fill their theaters, little regard being paid to literary merit or moral tone in the play. The very few honorable exceptions who have shown a desire to furnish a class of dramatic performance which should illustrate the works of great authors, like Shakespeare, Goldsmith, Sheridan, Bulwer, have found it quite necessary to procure actors of high reputation to insure an audience that would pay expenses.

To be sure, a play of high character needs actors of ability and experience for its fair interpretation, and it may be that the managers of to-day are not altogether to blame for the want of interest on the part of the public in Shakespeare and Bulwer. Those who would care to attend a representation of Hamlet or Richelieu are for the most part educated and cultured, and a small fraction in a large community; and they would go more to be instructed than simply entertained.

Unless, therefore, actors of positive reputation were announced for the leading parts, such people would not be found in the seats, and their places on such an occasion are not usually filled by the lovers of caricature and buffoonery.

There has grown within a few years, among the educated in our larger communities, a disposition to form associations for the study of the drama, and the results of such study tend to a more exacting expectation from those wearers of the buskin who essay the parts in classical plays. In America there are men and women who can sustain the ordeal of criticism by their rendering of a classical personation. We can count them on our fingers, and their excellence is the result of devotion to dramatic art.

Among these are the persons whose portraits accompany this article. The reader has perhaps seen one or all of them on the stage; if not, he has heard of them often enough, and has no doubt concerning their merit.

Mr. Murdoch is an aged man, long ago retired from the scene of many well-earned testimonials to genius and art, yet the part he took at the Dramatic Festival held in Cincinnati last spring, indicated that his dramatic power, despite his age, had suffered little diminution. That subtile magnetism with which the great actor fascinates his audience had not departed from him. He was Murdoch still.

Miss Morris and Mr. McCullough are active members of the "profession," and deserve commendation for their earnest endeavors to sustain the respectability of the modern theater, or, at least, to prevent its falling altogether into the jaws of the Moloch of claptrap and questionable burlesque.

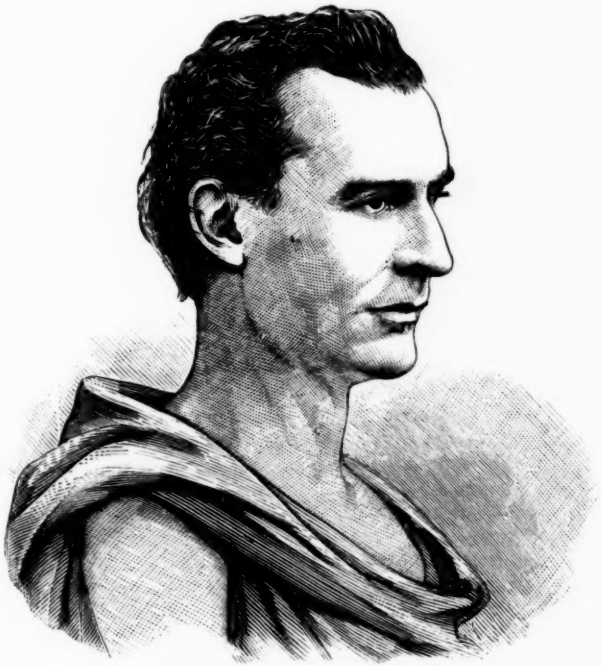
The portrait of Mr. Murdoch indicates a person with a strong predominance of the motive temperament, which is the basis of restless energy and vigorous activity; he has also a considerable degree of the mental temperament, which gives a studious cast of the mind, and a great deal of susceptibility to mental impressions. In early life he was distinguished for muscular power and for a restless mental enthusiasm. Age has increased his moral and spiritual developments, while the intellect also has been ripened and strengthened.

There are three or four characteristics which have been the source of his success as an elocutionist, or orator; and as an actor. The reader will observe the immense development across the brows, showing great length from the opening of the ear to that region; this development gives a bright, quick, clear, practical cast of mind, the desire for knowledge, the ability to gather it and retain it, and the power to reproduce acquired knowledge on the instant. Had he been a lawyer he would have been remarkable for his power of extemporaneous debate and sharp repartee. Nothing escapes his notice; in a landscape that to most people would seem sterile and uninteresting, he would

see a thousand forms or variations of shades. Even a dead tree, whose gaunt limbs are outlined upon the sky, to him is full of meaning; he thinks of its history, the glory of its youth, of its tottering age, and its not distant decay; and thus he would derive sentiment from what appeared an unpromising source.

special use. His Comparison is enormously developed, which gives him a spirit of sharp distinction; he recognizes shades, resemblances, or condition, and is not inclined in his mental action to generalize, but rather to specialize.

He has wonderful knowledge of human character; the length of line from the



JOHN MCCULLOUGH AS BRUTUS.

With his fine development of Language he expresses his knowledge with readiness. He ought to be a great story-teller; as a man of years he should be full of anecdote, and his stories should be pertinent, because his memory and power of comparison are such that he will select an anecdote for any occasion, that will seem to have been made for that

opening of the ear to the upper central part of the forehead where it joins the hair, is long, and the prominence at that point is the location of the organ by which human nature, disposition, character, and motive are intuitively discerned. He has always been remarkable for that, and it is this faculty which gives him a taste for the drama, and for elocutionary expres-

sion of character and feeling. He is always sympathetical; any man's friend who is in trouble; and there is also a religious sense which gives him a reverence for the higher Power.

He has very strong Firmness, which renders him unflinchingly persistent when he deems his course to be right. He has independence of spirit, but a great sensitiveness to the good or ill opinion of others, so that while he feels his own power, he is inclined to defer to the wishes, prejudices, preferences, and even caprices of others; he is a man who is very tender in his affections and sympathies and calculated to win the personal confidence and friendship of any one who can appreciate his type of character and life.

The social brain is strongly marked; he is a natural lover, and there is such steady loyalty, sincerity, steadfast truthfulness in his affections that he wins and holds friends; the element of conjugal love is uncommonly well marked in him; and his whole history is believed to be an honorable exemplification of the integrity of that part of his nature; and so far as we ever heard, no word, question, or criticism has ever been uttered disparaging the loyalty of his love, or the correctness of his conduct in the domestic sphere.

That is a very good and strong face; it is the type that belongs to old age and temperance, not in eating and drinking only, but in self-control in most respects. He is not likely to be affected with weakness of the heart's action; is likely to attain to a great age, and not to die suddenly.

That is the kind of head for an editor and teacher, especially a teacher of physiology and pathology in a medical college. It is the right head for a historian, and is adapted to oratory, and to the expression of feeling and sentiment as an actor; but he is not a copyist, and can not well act a part which he may not honestly adopt and feel as his own. A man with large imitation and less individualism than he, can adopt any character from grave to gay, can play the saint or villain, and "frame a face to all occasions"; but Murdoch must believe in what he is doing, and do it from a hearty approval and sympathy with the thing done.

JAMES EDWARD MURDOCH was born in Philadelphia on the 25th of January, 1811. He was intended by his father for his own business, that of account-book making; but as he early manifested a taste for reading and study, he was permitted to follow the bent of his mind. At fifteen years of age he announced his purpose of becoming an actor, although he had witnessed but one theatrical performance, Shakespeare's "Much Ado About Nothing," and was permitted to enter at once on a course of training in the dramatic art. In a few years he had made such progress that he was urged by teacher and friends to enter upon his public career, and he accordingly appeared, in the fall of 1829, at the Arch Street Theater, Philadelphia, and was received with decided marks of approval. He selected parts in minor plays, discreetly preferring to render them acceptably, and so gradually develop his powers before attempting a great personation. In 1838 he appeared in the Park Theater, New York, in support of Ellen Tree. Three years later he withdrew from the stage, to devote himself to the teaching of elocution—a vocation which appears to have possessed a great charm for him, and which he interrupted at intervals, to accept an engagement for a professional tour in this country or England.

In October, 1845, he acted in Hamlet, before large audiences, in the New York Park Theater, each time winning enthusiastic applause by the maturity, power, and spirit of his conception of Shakespeare's masterpiece. The success of this performance proved the wisdom of the actor in advancing slowly from the minor to the greater parts, in not venturing to interpret publicly a difficult character until he had fully mastered it in detail. "He fairly carried the weanling lamb be-

fore he attempted to shoulder the bullock."

Earlier in his career he fell in with Mr. Forrest, at Augusta, Ga., who, discovering his qualities, requested him to play as Pythias to his Damon. The manager of the theater protested that Murdoch was "too young and slight" for it, but Mr. Forrest insisted, in his peremptory fashion, and "a well-won and well-preserved favor with the public confirmed this friendly confidence." Mr. Forrest used his influence in behalf of the young actor, toward securing him a favorable hearing in the highest walks of the drama.

As a teacher of elocution, Mr. Murdoch formulated a system, with the physiology of the vocal organs as its basis. He was intimately acquainted with Dr. James Rush, of Philadelphia, the author of "The Philosophy of the Human Voice," and from him many suggestions were received, which he applied in his teaching. In connection with his professional labor he has lectured in different parts of the country, before lyceums, colleges, and other institutions, and before select audiences in the leading cities, and probably more than any other man has contributed to the development of the interest in elocutionary studies, which is a feature in cultivated circles. During the civil war Mr. Murdoch gave elocutionary entertainments throughout the North, in aid of the Sanitary Commission, and devoted himself to the care of sick and wounded soldiers, and served for a while on the staff of Gen. Rousseau. At present he resides in the suburbs of Cincinnati.

JOHN MCCULLOUGH. The portrait of Mr. McCullough, as we have it, is strongly marked in physical and phrenological respects. It shows a tough, enduring type of organization, in which there are elements of delicacy and susceptibility. The brain is of good size, developed well in the base, and also in the upper lateral parts, especially in the temporal region. The face has well-marked and powerful features, yet over it is drawn a veil, as it were of transparent silk, which softens the massive and rugged characteristics and imparts an artistic or refined effect. In Edwin Booth's face there are striking esthetic qualities, and to us Mr. McCullough's features are not unlike Mr. Booth's. The contour of the forehead

CLARA MORRIS.

shows a fair blending of the perceptive and reflective organs, ability to estimate facts according to their special constitution, and to apply them in the deductive sense.

At the upper part of the forehead the fullness indicates his possession of more than average capability in comprehending the motives and purposes of others—of reading between the lines of the living biography of men. We judge that the head is broad over the eyes. Form and Order appear to be large, and Mirthfulness also appears prominent—a develop-

ment which is not often seen in the typical tragedian's head. The height of the head above the ears shows a strong personality, with not a little of ambition and sensitiveness. He is courageous, but not particularly self-assured; not the man to talk about himself and vaunt his performances. He is rarely sure at the outset of the result of an impersonation, but throws himself into a part, however often it may have been repeated, with earnestness, determined to do his best, and, if possible, impart to his rendering a new and better phase. He is endowed with organs which render him cautious and guarded, yet the executive faculties impart to his disposition characteristics of emphasis and spirit, rendering him prompt to resent injury, especially that which affects his reputation and his social connections. He likes notice, favor, and applause, but is not likely to be spoiled by admiration.

John McCullough comes of Irish parentage. He was born about the year 1837. In 1862 he was poor and unknown, struggling with the asperities his profession throws around the beginner, and playing minor parts in Philadelphia. He then gave no promise of the eminence to which he has since risen, but he had proven himself a careful, conscientious student, and by his attention to his studies had attracted the attention of his manager. One day when Mr. McCullough paid a visit to him he met Mr. Edwin Forrest, and was introduced to him. He had always looked up to this great actor with reverence and awe, and to be made acquainted with him, and allowed to take him by the hand, seemed to the struggling young man to be a very high honor. The next day he met Mr. Forrest on the street; and, to his surprise, the great actor stopped and spoke to him. They walked along together, and Forrest suddenly asked Mr. McCullough if he would like to go to Boston in his troupe.

"I hear very good accounts of you," said he, to the astonished young man. "I hear you are careful and studious, and if you will go I think I can obtain your release from your engagement here."

Eagerly accepting the offer, Mr. McCullough hurried off, with Forrest's promise to communicate with him in a few days.

"I waited ten days," said Mr. McCullough; "to me ten days of hope and anxiety, ten days of wretchedness, but heard nothing. One night I was playing, when word came to me to go to the box-office, where Mr. Forrest was waiting for me; and when I arrived there he told me my engagement had been canceled, and that I must meet him in Boston on the following Tuesday. He asked me if I had money, and when I told him I had a little, he pulled out some, and made me take it."

Mr. McCullough went to Boston, and found he was cast for Pythias to Mr. Forrest's Damon. Here we notice a repetition of Mr. Forrest's relation to Mr. Murdoch. He learned the part, and went to the first rehearsal. To his surprise Mr. Forrest didn't know him, but still he played until he reached a passage which he asked leave to play a little out of the orthodox method.

"Play it as you always have," ordered Forrest, peremptorily.

Mr. McCullough explained that he had never played it before, to Forrest's amazement, who complimented the ambitious young man upon his ability, and then and there was cemented a friendship between the two that lasted until nearly the close of Forrest's career.

Having thus become attracted to the promising young actor by the merest accident, Forrest, whose idiosyncrasies of character had scarcely a parallel in any actor of the time, seems to have adopted him in his mind's eye at once. With the same marked autocracy of temperament, the language of which signifies, "I know what I am about," the "old man," at his first performance with him, threw young McCullough into the brilliant part of Pythias to his Damon. He had found a dramatic kindred soul, but not a rival; therefore he at once became attached to him. He had found a kindred physiological type, yet still not a rival; therefore in that, also, McCullough was the very one

to transmit the American Damon of the stage to another generation.

Edwin Forrest was one of the most remarkable physiological specimens of men that ever trod the stage. The first and crude conception of him was what he himself wrought in the public mind in such characters as Jack Cade and the Gladiator. In them he moved the populace as no other man could. In Great Britain, performing in this primitive role, when Europe was astir with revolution, he would have been a revolutionary hero, and a most dangerous man to the Government. Hence, Macready was the more acceptable there, not merely because he was "to the manner born," but because he was more in harmony with British ideas and culture. But Macready was not the superior dramatic subject, as he certainly was not nearly so remarkable a physiological one. This Ajax of the stage was, so to express it, endowed with the genius of size. There was a metaphysical Forrest to be elaborated. It was that which made the man a complex problem, and it was only to the subtle critic that this metaphysical Forrest was palpable. On the other hand, Macready was not endowed with the genius of size, but was the martinet of the stage.

Notwithstanding their structural difference, Forrest was more akin to Edmund Kean than to Macready. Hence, as culture unfolded him he rose to the personifications of Richelieu, Lear, and Coriolanus. His genius at length took him above Jack Cade, the Kentish bondman, and Spartacus, the slave gladiator. Going back to old Rome, it inclined him to Coriolanus instead of Spartacus; and going over to England in his later aspirations, he renounced Jack Cade in his thoughts of an Oliver Cromwell, who was at once the soul of a great constitutional revolution, and finally the autocratic embodiment of a famous commonwealth. Such a character would have suited Forrest beyond all parallel; and it is said that before his death he had collected eleven plays of the Great Protector, at an immense cost, in working out an idea that he did not live to realize on the stage. Evidently at the latter period of his life he saw another dramatic programme to be worked out, at which, however, he could hint, but could not consummate.

Mr. McCullough has all the physical force and intellectual daring which enabled him on a first performance to withstand the shock of Forrest's Damon. He is in the prime of life, well preserved by temperance and a generous disposition, which is always favorable to healthfulness of body and soundness of mind. He is five feet eight inches in height, has a large, well-developed chest, a big heart to send the hot but healthy blood in swift currents through his veins; powerful shoulders, and a large, muscular neck. We are inclined to think that physiologically considered, he is one of the best endowed actors living, possessing a most available type of structure, so that he can play his master's Gladiator, while he is fitted to parts that the physique of Forrest forbade.

THE part that woman has borne in American drama for many years has been singularly wanting in strength and high culture. It may be due to the attractiveness of the light and easy rôles provided by the prevailing type of social comedy, or it may be on account of the severe thought and protracted study imposed by the classical playwright, that scarcely one woman in a thousand of those who walk the stage dare venture to personate a character in high tragedy. Of the less than half dozen who may be said to sustain the leading female part in a standard dramatic representation without exhibiting too great a contrast of weakness with the skill and vigor of such actors as Booth, Salvini, Barrett, and McCullough, Miss Clara Morris certainly takes a foremost place, and is worthy the encouragement she has received for the faithful and persevering study she has given to the characters she essays.

In her organization we perceive at once the characteristic workings of the motive

temperament; the large frame, wide jaw, prominent cheek-bones, and salient brows are co-ordinates of the type. She inherits from her father, or the masculine side of her mother's family, traits of disposition by which she is most commonly known. Decision, perseverance, aspiration to accomplish whatever she undertakes, and executive capacity, are among the elements especially marked in her every-day life. She is firm even to inflexibility, and definite in the expression of her conclusions. She is a sensitive, excitable woman, but possesses remarkable control over her feelings. Her affections are warm and lasting. It is in the department of her attachments that she will least brook offence or injury, and yet exhibit the tenderest consideration and make the broadest allowance. It is probable that one might search the dramatic field and not find another woman who has less trouble in her relations with managers and actors. She is appreciative of her rights and courageous in demanding them, yet not the woman who frets and chafes and scolds when she has been aggrieved. She is disposed to set about obtaining redress in a quiet, resolute fashion, and consequently she rarely has occasion to demand justice. Managers know as a rule that she will meet her engagements, and that she expects them to perform their side of a contract faithfully. That is a firm mouth, but also a kindly-natured one. She is sympathetic, generous, and altogether reciprocal in her social connections. We notice that the organ of Form is remarkably well developed, giving her an exceptional understanding of the relations of configuration in material objects. She could have become an excellent artist, having ability to reproduce with great fidelity any object in nature.

The brief sketch of Miss Morris' career as an actress is adapted from a recent notice of her given in a contemporary. She was born about the year 1846 in Cleveland, Ohio, her parents being in humble circumstances. Having shown talents for recitation and acting, she prepared herself by study and practice for the stage, and in 1869 was engaged to play in minor parts at Wood's Theater, Cincinnati. Her performance was acceptable, and she grew in favor with the Cincinnati theater-goers. Later she came to New York and was engaged by the manager of the old Fifth Avenue Theater. Here she was associated with a company of talented actors, and after awhile an opportunity occurred which brought to view her peculiar dramatic genius.

She was called upon to fill the place of the leading lady of the company at short notice. The part was Anne Sylvester, in Mr. Collins' play, "Man and Wife." She astonished the audience by a performance so intensely dramatic, so weirdly psychological, that old play-goers were aroused to great enthusiasm, and the applause of that assemblage fixed Clara Morris' status on the boards. When her engagement was concluded she accepted a position in the Union Square Theater. Whether the acquisition of Miss Morris caused or accelerated the immediate popularity of the then new house or not, it is certain that the Union Square quickly became the leading theater of the city. In "Miss Multon," "The Geneva Cross," and "The New Magdalen" Miss Morris achieved exceptional fame. Her engagements later have been only occasional, but always pecuniarily successful.

Miss Morris is married to a New York merchant of ample means, and her domestic life is said to be very happy. Mr. and Mrs. Harriott—this being her name, outside of theatrical circles—seldom appear in public except in the society of each other. Their home is at Irvington-on-the-Hudson. Miss Morris is not a handsome woman, but her figure is good and her face, especially in repose, is sweetly placid.

It should be mentioned that for many years this lady has been afflicted with a very trying malady affecting her spinal column, and often she has performed before a delighted audience while suffering acute physical distress. D.

THE TRUE BASIS FOR THE SCIENCE OF MIND AND STUDY OF CHARACTER.

THE study of man, although of the utmost importance and undoubtedly the most interesting of the whole field of human inquiry, has not received the careful consideration it justly merits from those who aspire to be teachers of men.

The poet in the warmth of his imagination, the historian and the novelist with the accuracy of observation, have often described men with their passions, animosities, longings, aspirations, and all the various feelings which make up the characters of men. But their pictures, though vivid, lack the uniformity and distinct analysis which should constitute a science of character. It is truly wonderful that man has occupied so little of the attention of those whose peculiar duty it was to make him a study. The types of human character are so abundant and prominent that it seems hardly credible that the science of character only dates as far back as the eighteenth century, and had its origin with Francis Joseph Gall. True, there were attempts to describe and classify men according to their dispositions before the days of Gall, but they were so superficial, unsatisfactory, and unscientific as to be unworthy of notice. As far back as human records reach, the human race has always presented types of character unmistakably different from each other. The history of every nation and observation of the men of our time reveal this fact. Geology, which goes back farther than any human record, reveals man as an intelligent being, the tool-maker, and even then showing his great superiority over the brute creation. History is but the record of types of character. There are Nero and Caligula, imbruing their hands in human blood to satisfy a savage propensity, which forms the principal motive in their character. There is Pope Alexander VI., steeped in hypocrisy, reeking with the crimes of incest, poisoning, and murder. There is King John, full of blasphemy, foul with unnatural vices, inconstant, fickle, yielding before the threat of his barons. There is the religious enthusiast, Peter the Hermit, kindling Europe into a blaze of religious excitement, compelling the noble, the powerful, and the weak to leave their homes and engage in a long and desperate crusade. There is Henry VIII., reveling in amatory pleasures. There is Lucretia, even in the face of death, faithful to her marriage vow. There is the philosophic type, buried in deep abstraction—Aristotle, Socrates, and Plato. There is the poetic type—Homer, Virgil, Milton, Shakespeare.

The observation of men of our time reveals the same diversity of types. We have brutal murderers, Burke and Hare and Pomeroy; religious fanatics, Freeman, Guiteau, and others; sublime poets, Longfellow, Browning, Tennyson. The student of history and observation therefore can not fail to perceive that the human race has ever been divided into well-marked types of character.

METAPHYSICS, DISCURSIVE AND SPECULATIVE.

The neglect to form a science of character is in part attributable to the metaphysical school of philosophy, which has cared more for idle disputations and long-winded discussions upon matters of very little importance. Vain theorizing characterized the systems of philosophers before the time of Gall, who had directed their attention to the study of man. It has been the unsatisfactory state of the science of mind which has retarded the science of character, for as the mind is the foundation of the character, it was necessary that its fundamental organs and functions should have been analyzed; for it is by the fundamental powers singly and in combination that all the types of character are produced.

The metaphysician, whose task it was to accomplish this analysis, has given us nothing but vague generalities. We are struck with feelings of melancholy regret for the sad waste of time and choice intellect, when, surveying the whole field of

metaphysical inquiry, we behold nothing but campaigns of endless battles, interminable disputes, hair-splitting distinctions, and the ceaseless warfare of words which have ever been its leading features. For more than two thousand years the best intellects of every period have been engaged in such intellectual combat with each other, and the field still remains strewn with the sad wrecks of fatalism, materialism, transcendentalism, and pantheism. What absurd and extravagant doctrines have not had their origin in the minds of those who looked to consciousness alone as a guide! After two thousand years of vain speculation, philosophers are still on debatable ground; some maintain that there is an external world, others that no external world exists; some maintain that we think and feel through material organs, others that the mind is ethereal and not connected with the body; others again are divided even upon the fundamental powers of the mind.

"CONSCIOUSNESS" AS A FUNDAMENTAL PRINCIPLE.

The chief faculty through which they derive all their knowledge of the mind has its functional nature still under discussion—I mean consciousness. Some philosophers maintain that consciousness consists of an Ego only, others of a non-ego. Others again assert that the Ego and non-ego are mysteriously combined and act as one. Leaving the dispute as to the function of consciousness, their principal fundamental faculty, still undecided, they carry on long discussions with each other respecting what are fundamental faculties, the consciousness of one philosopher declaring that such and such are fundamental faculties; the consciousness of another philosopher as triumphantly evolving another set of fundamental powers, in opposition to those of his opponents. Some reduce everything to sensation and permanent possibilities of sensations (J. S. Mill). Others struggle fiercely for innate powers; while others create all the powers which form the characters of men by laws of association, attention, and habit.

The history of philosophy is but a history of a cycle of these disputes. One theory arising in one age and supported by some eminent thinker is popular for a time, then gradually loses its hold upon men and glides into the realm of forgetfulness, to be revived in another age, only to undergo the same painful road of popularity, opposition, and neglect. Metaphysicians have no science of the mind. All their fundamental faculties rest upon the testimony of each individual consciousness, and are subject to its ever-varying changes and fanciful modes. They are not connected with organs. They have no physical seat in brain or body; without a resting-place, devoid of bones and flesh, they have taken up their eternal wanderings through the realm of consciousness, invisible spirits, ghosts of the imagination.

That the systems of mental philosophy are formed upon insecure and conjectural bases, is evident from the fact that no system has maintained its ground for more than a limited number of years. Each age has had its distinguished philosophers with their peculiar views, and the people of that age have looked up to them with awe and respect as the intellectual giants of their time. But scarcely has age begun to dim the power of thought of these representative philosophers, when some intellectual prodigy evolves a system more in accordance with the time in which he lives, and demolishes the doctrines of his predecessors. Thus mental philosophy is built upon the shifting sands of time, ever changing her fundamental powers, now fixing apparently beyond dispute the laws and principles of mind, then tearing down the fabric so firmly built. The cause of failure of the metaphysical school to establish a science of mind and character is apparent. Each philosopher has endeavored to evolve a science of mind from his own self-consciousness, and the result has been confusion upon confusion; for each philosopher has only acknowledged as funda-

mental faculties those which were the most prominent in his own mind. They scorned an appeal to observation; they shut out the world of things and men entirely from their minds; and instead of observing the action of men to find what was in others' consciousness, they sought to find the faculties of mind solely by self-introspection. Once in a while they appeal to a blind man or two, to support their theories, as, for instance, in the discussion concerning our knowledge of space; both those who maintain that a knowledge of space is obtained by an innate power, and those who assert that it is wholly an acquired product, appeal to the experience of the blind to support their theories; but they have never made a systematic collection of the facts of nature to support and prove their theories, and yet this ought to be done in order to arrive at a complete analysis of the powers of mind.

Suppose, for instance, that the fundamental powers could be ascertained by self-introspection, it is evident this could only tell half the story, for it is well known that men differ widely in mental character from each other, so that what one philosopher considers as fundamental, would only be those qualities which happened to be uppermost in his mind at the time of his meditations. This is borne out by fact; for a long time the faculties recognized as fundamental consisted only of intellectual faculties; now, it is evident that, engaged in abstract thought, and in intellectual meditation, the intellectual faculties would be the uppermost in the mind, hence the faculties recognized as forming our mental nature by the metaphysician are of an intellectual character. Of the other powers which form the characters of men, the propensity to fight, to kill, the love of offspring, the instinct of propagation, the love of approbation, they have said almost nothing.

NECESSITY OF CONSIDERING MIND OBJECTIVELY.

The metaphysical analysis of the mind is extremely one-sided. If a careful observation of the mental dispositions of others had been considered and applied as a corrective to their self-introspective method, it would have been more complete. But the metaphysician up to recent times has always treated with contempt facts derived from observation; thus setting at naught the experience of mankind, and absorbed in his own selfish observations, it could not be expected that the science of mind thus evolved would consist of more than vague generalities, and flat denials of some of the most evident innate powers. The philosophers of this school, in their desire to get rid of the objective side of thought, have appealed to the subjective side entirely, and thus lost the most universal field of proof—the observation and experience of mankind. Neither did they escape as they hoped the objective side of thought, for there is really no such thing as thought without its objective side. Let any one try, for a moment, to evolve from his own consciousness the various faculties of his mind, and he will find that before he can form any conception of the nature or function of a faculty at all, the faculty must be presented to his mind in an objective aspect; and in order that it may be presented as an object to the mind, it must present itself in one of its distinct modes of activity. The question, then, arises to perplex the inquirer: Is the mode of activity thus presented the function of one fundamental power or of many? To answer satisfactorily this question would require careful reflection upon the modes of activity of the various faculties presented, from time to time, to self-consciousness. Now this process is analogous to the observations of nature; it is a species of mental observation, and as such, the analysis of mind thus founded will depend for its completeness and accuracy upon the skill and range of the mental observations. It would therefore appear that observation forms even a very important part in mental introspection, and can not be shuffled aside, as the metaphysician strives to do. It is evident also that this kind

of mental observation, from the very nature of the difficulties which surround it, is apt to be extremely one-sided, limited, and inaccurate, and stands in need of thorough observation of external facts to enlarge and confirm any analysis of the mind based upon it.

The futility of establishing an analysis of the mind by the method of self-consciousness alone, appears in the various systems of mental philosophy. The dust of ages has accumulated upon libraries of books full of endless discussions concerning the fundamental powers of mind, yet no complete analysis of the mind has been attained. Take for instance memory, which is recognized by many philosophers as a fundamental power. If this be a distinct fundamental power it ought to perform one distinct function, namely, memory, and should be able to retain and recall all things with equal facility; but what do we find by actual observation of men? That some have good memories for events or historical facts, and poor memories for figures. Some have poor memories for colors, and yet can remember the situations of places with facility. So others again can not remember locations, but remember numbers. Some remember all the varied harmony of time and tune, in vocal or instrumental song; while others with good memories for almost everything else, can not distinguish one tune from another. This evidently points to powers behind memory, which are in some cases deficient and in others well developed. Memory, therefore, is not a fundamental power, but only a mode of activity of fundamental powers.

The same may be said of conception, perception, and imagination. If perception and conception were fundamental powers, we ought to be able to perceive and conceive of all objects with equal accuracy and vividness; but so far from this being the case, it is notorious that there are persons unable to conceive or perceive of many, while their perception and conception of other things is not only good, but intensely keen. So with almost every faculty the metaphysical school calls fundamental.

THE INCOMPETENCE OF METAPHYSICS IN ANALYSIS.

If we attempt to apply the mental analysis derived from self-consciousness alone, to explain the varied states of mental phenomena, its incompleteness and unsatisfactory condition become at once apparent. This analysis can offer no adequate explanation of idiocy, insanity, or of partial genius. Nor can it tell why some have talents for mathematics, and none for poetry; why one person's soul kindles with oratorical fire and utters burning words which another with equal intellect can not command. It can not tell why one man is a clown and another is a consummate tragedian; why one man can express himself with ease and facility, and another man with even more intellectual power can not command sufficient words to express his ideas clearly. The metaphysician may attempt to account for diversity of talents by habits of association, attention, and the force of circumstances, but the observed facts of nature do not support their conclusions.

Individuals have been found to manifest powers for music, oratory, mechanical invention, who have been brought up in the most unfavorable circumstances, and so early in life as to preclude the possibility of association, habit, or education, having moulded their minds in this direction. To enumerate examples would only lengthen this thesis unnecessarily. A few may suffice. George Bidder, in early childhood, had a talent for mathematical pursuits. Pope was only one among a thousand poets of whom it could be said they "lisped in numbers, for the numbers came."

It is a well-known fact that youths who apply themselves assiduously to the same task and spend the same time will, nevertheless, show diversity of acquirements. Children brought up in the same family and under the same instruction differ often in character and talent. Association, habit, circumstantial environment, or any other law of the metaphysician,

can not account for the diverse dispositions and talents of men.

The metaphysical analysis of the mind is equally futile in its explanation of insanity or mental aberration and idiocy. In former times, when the self-introspective school had full sway, the soul or mind of man was thought to be spiritual, and entirely independent of the body; so, in those days, when men had a passion for blood, or were troubled with some mental aberration, or a fit of insanity, they thought he must be possessed by some evil demon, and they called in a priest to exorcise him. Nor has the metaphysical school of our day made much advance beyond this puerile stage of thought. It is still undecided as to the relation of the body to the mind; the seat of their various faculties still unascertained, they can offer no adequate explanation of mental aberration, disease, or insanity. When a man is insane, they say he has lost the command of his faculties. But what faculties, we may ask? for the manifestations of insanity are not the same, but even more diverse than the manifestations of men in the natural state. Some lunatics, for instance, are subject to the most absurd delusions, believing themselves to be popes, kings, emperors, and other great men. Some believe themselves attended by spirits; that the Virgin Mary awaits upon them, etc. Some are harmless and full of kindness, others are possessed with a desire to fight and kill, and would tear their fellow inmates or keepers into pieces. It would be a long story to enumerate the different phases of insanity. The metaphysician can not account for these phases. He might say that the mind was diseased, but in what place and in what respect, he is unable to tell. The intellect of some is apparently sound, and yet they are subject to the most ridiculous delusions. Why can these lunatics reason intelligently upon almost all subjects except the one which is the form of their insanity? So useless is the metaphysical analysis for any practical purpose, that a metaphysician is never called in to pronounce a man sound or unsound; and yet who ought to be better able to decide such cases than those who claim to have analyzed the mind? The truth is undeniable, that by self-introspection we can not ascertain any organ, either of mind or body. No one can, by merely thinking or reflecting upon the various thoughts or emotions which arise from time to time in his mind, tell whether they depend for their manifestation upon material organs or not. The very looseness of the phraseology we are obliged to employ proves this emphatically. We speak of heart forces, of brain power, of the swellings of the soul, and such like terms, and yet we do not really mean that the heart is the seat of any faculty of the mind. Whatever we may be able to ascertain by self-conscious reflection, we can not ascertain the seat of individual organs, nor their exact function, nor the process by which thought or feeling is developed. No knowledge of physical organs was ever obtained by the self-conscious method. If physiologists had not long ago given up this process and resorted to observation and experiment as a basis for reflection, we would still be in the vale of ignorance with respect to the function of the multitudinous nerves of the body. It was only by accurate observation that the motor and sensory nerves were separated, and their functions ascertained. So, also, with every bodily function, experiment and observation were at the basis of its discovery. The same law must regulate the investigation of the mental functions, if they are connected with material organs. We love, we hate; we are urged by an instinct to propagate our species, or an instinct to defend ourselves or property; but consciousness can not tell the seat of these feelings, nor has anatomy, in her search for the fundamental or genetic faculties of the human constitution, been more successful. The brain has been dissected for ages, and anatomists have examined its various parts, and have failed to find the genetic powers of thought or instinct hidden away in its convolutions. No one could tell by merely looking at a convo-

lution in the brain that it was the seat of instinct, feeling, or memory.

THE EARLY WORK OF THE PHRENOLOGIST.

When Gall appeared upon the arena of investigation into the genetic powers of mind, he found everything in the mental field in a deplorable condition. Philosophers of the introspective school were still debating among themselves upon those very faculties necessary to form an accurate judgment of anything. Anatomists and physiologists were still undecided that the brain was the organ of the mind. It is true they had partitioned off the brain into a few compartments and had added barbarous names to them, but these names indicated nothing but ignorance of the function of the parts to which they were affixed. Gall had, therefore, not only to combat the erroneous analysis of the mind, as given by the metaphysicians, but even to revolutionize the science of anatomy. He taught the composition of the brain. He proved the brain to consist of fibers and cells, and separated the white from the gray matter. When we read the account of Dr. Spurzheim's dissection of a brain, in presence of the learned anatomists and professors of medicine in Edinburgh, we find that so ignorant were these professors of the composition of the brain, that some of them shook their wise heads and said they *thought* they saw fibers. The theory of the brain composition is now a settled fact, yet Gall had to combat this point against the learned of his day. He taught a more satisfactory method of dissecting the brain, a method which undoubtedly laid the foundation of the present experimental school, at whose head are Ferrier, Goltz, and others, yet some of the disciples of this school, ignorant of what they owe to Gall, are still in the habit of sneering at him and his mental philosophy.

It is not within my province to give an account of the discoveries Gall and Spurzheim made in anatomy and physiology. I mention these only to show that the founders of Phrenology were not unskilled in anatomy, as the opponents of Phrenology have asserted. It was the opponents of Phrenology who were unskilled in anatomy. All the discoveries in anatomy and physiology made by Drs. Gall and Spurzheim, and which were bitterly opposed at the time, are now acknowledged by the leading anatomists and physiologists to be sound and correct. The condition of mental and anatomical science being such as we have described, we must acknowledge the fathers of Phrenology to be men of rare genius. The force of mind which enabled them to break away from nearly all the recognized channels of investigating the mind, and seize upon a system of investigation which included all the benefits obtainable by other methods, and added a means of determining the organs and functions of the brain entirely overlooked by all who cultivated the science of mind, is surely worthy of the name of genius. Their superior minds surveyed the whole field of mental inquiry. They saw at once the imperfections which necessarily followed from investigating the mind by self-consciousness alone. They saw the futility of anatomy unaided by physiology to determine the organs and functions of the brain, and formulated a method at once simple, natural, accessible, and within the range of thorough demonstration; a method destined to lead to a science of mind and character founded upon a physical basis. As the truth of Phrenology depends upon this system of investigation, I think it necessary to show in detail, and yet, as concisely as possible, the method of proof and its attendant advantages. Especially do I think this necessary, as Professor Bain, while aided in the composition of his works on the study of character by the analysis of the human mind supplied by Phrenology, and also by the new light thrown upon many obscure physiological facts by deductions obtained from the phrenological methods; yet, after examining Phrenology and acknowledging its merits and the general truth of its inductions, he professes to

steer out upon a course of self-conscious reflection, to discover the fundamental powers of mind. I will not discuss Bain's work upon the study of character here, but will leave it till later, and in the meanwhile go on with the method of phrenological investigation.

Ever since the Baconian philosophy laid down the grand principle of first accurately ascertaining facts and then drawing inductions from them, the domain of speculative philosophy has been growing narrower and narrower; science after science has freed it from the trammels of the purely speculative school, and established itself upon the solid basis of inductions gleaned from a wide field of observation. For ages the science of geology offered ample scope to the speculative philosopher to engage in endless disputations; but a few men by patient observation of the phenomena of nature put to naught all their vain speculation, and established a science of geology on the basis of induction; so, also, the sciences of chemistry and physiology never made any positive progress till men of patient inquiry, undaunted by vague theories, urged with all the vehemence of authority, established them upon the basis of observed facts. They constantly observed the various organs of the body in activity until they learned their functions. If they had merely speculated upon the probable function of the heart or liver, they would be speculating still. Thus every science has progressed in proportion as it has been freed from the shackles of speculation and guided by the light of observation.

THE PHRENOLOGICAL METHOD INDUCTIVE—BAIN.

Phrenology was an attempt to rescue mental science from the region of speculation, and subject it, like other sciences, to experiment and observation. Phrenology claims that it should be investigated according to the principles upon which all sciences having a physical basis are investigated. Bain evidently deals unfairly with Phrenology when he declares that he is unwilling to follow its long, though correct method, in determining what are and what are not fundamental powers, and seeks to settle the truth or falsity of the phrenological analysis by what he calls an appeal to consciousness. No physiologist would submit to have the functions of the various parts of the body discussed in this way. He would insist upon an examination of the observed facts by which the functions of the different bodily organs had been established. What physiologist, for instance, would now submit to a long discussion upon the functions of the liver, the kidneys, the heart or lungs, whether it were possible that these could perform the work respectively assigned to them. Every physiologist would, most assuredly, protest against such a course, and insist emphatically upon an examination of the observed facts of nature; yet, this is the way the modern school of mental philosophy persists in determining the merits of Phrenology, which claims to be founded upon the observation of physical and mental phenomena connected with material organs.

The method of discovering the organs and functions of the brain pursued by Gall was similar to that which, pursued by the physiologists, led to the discovery of the different organs of the human body and their functions.

It was a method only such as a genius would ever have thought of applying to the discovery of the functions of the brain. Thousands had daily observed the falling of apples to the ground, but it took a Newton to discover, by the application of this fact, the universal law of gravitation. Steam had always issued from the mouth of a kettle, but Watt saw not only the steam, but the power it contained. The blood had coursed through the arteries and veins of men ever since the creation, but no philosopher of the speculative school ever evolved and demonstrated a theory of its circulation; this was the glorious achievement of Harvey, by dint of patient observation and thoughtful induction. Anatomists, before the time of Gall, had dissected the brain by slicing it

as one would a cabbage, and theorized concerning the functions of its various parts, but no system of mental philosophy was devised. Men have differed in disposition and talent ever since the world began, but no philosopher, before the days of Gall, ever clearly traced the connection of these dispositions and talent with special developments of the brain. Much speculation no doubt existed before Gall as to the seat of the passions, intellect, and emotions, but nothing was clearly demonstrated. Many of the erroneous theories then promulgated still retard the progress of mental philosophy. Gall was the first philosopher who conceived the most accessible system of proof capable of determining and demonstrating the organs of the brain and the dependence of mental manifestation upon these organs. The method of his discovery was unique, but wonderful in its results. Who would ever have supposed that the form or shape of the head, that particular excesses or deficiencies in different parts could tell such a marvelous tale, and settle the debatable points which had been discussed for more than 2,000 years? In truth there is still something incongruous in the idea of telling a person's disposition by the appearance of the skull, and the science of Phrenology is even now mirthfully called Bumpology; yet, if we patiently follow the investigations of Gall, we will find that the science of Phrenology is not so ludicrous as many suppose. So men ridiculed Harvey's theory of the circulation of the blood, and no contemporary of his of any renown ever accepted or adopted it. Yet so perfect was his demonstration, that no essential improvement has been made to it, and its universal acceptance is the monument accorded to genius.

But let us see how Gall proceeded. Having gleaned from the field of observation facts to show that men differed widely in dispositions and talents, he next endeavored to ascertain whether these diverse talents and dispositions were connected with any physiognomical development of body or brain. He observed that certain parts of the skull were more developed than other parts, and he wondered if these developed parts might not be a sign of the disposition he had observed. How was Gall able, amid all the multiplicity of human dispositions, to connect one fundamental quality with a particular portion of the brain? There lay the Pyrenees to be crossed before success could gleam upon him. Here is one of the principles of the phrenological method which the learned have failed to comprehend, else they would cease from the unsatisfactory, if not the futile, attempt to discover the fundamental powers of mind by slicing, cutting, and subjecting the brains of animals to shocks of electricity. The expedient hit upon by Gall in order to separate the dispositions and actions of men and connect them with special cerebral developments, was as follows.

DIFFERENCE BETWEEN THE PHRENOLOGISTS AND EXPERIMENTALISTS.

He discovered in his investigations that nature had performed what the experimental school at the present time vainly tries to perform, namely, to obtain negative and positive proofs of the functions of particular portions of the brain. The school of Ferrier, Goltz, and others is wont to take living animals and remove portions of their brains, and ascertain by their actions what faculties seem to be lost. They hope in this way to discover the functions of the various parts of the brain. But Gall discovered that nature had already performed this process, for she had given birth to men and animals, with portions of their brains excessively developed, and the same portions in others exceedingly depressed. Gall, by a series of observations on men of peculiar and special talent or character, succeeded in connecting certain dispositions or tendencies with particular portions of the encephalon. This discovery was of immense importance to Gall, or rather to the science of mind. It was impossible to get a more extensive field to prove any system of philosophy. Nature had spread out in unlimited profusion the means of making and verifying observa-

tions. Not only the human race, but all animal life was subject to this method of investigation. Neither did time place a limit to these observations, for men and animals could be observed, not for one day only, but for months and years. The experimental school can boast of no such opportunities; their labors must necessarily be confined to a few animals under the effects of anæsthesia, and reluctant responses from the fundamental powers of mind can only be dragged from them amid scenes of blood, torpor, and stupor. These responses consisting mainly of bodily movements, will be interpreted with difficulty as the signs of the functions of cerebral organs.

Gall having thus discovered that the talents of men were connected with particular portions of the brain, he next proceeded to gather a number of skulls showing abnormal developments and depressions. He took casts of the heads of such persons as were noted for special talent or traits of character and also casts of those who were deficient in these same traits of character, and on comparing them together found that the former had certain portions of the brain excessively developed and the latter had but a small development of the corresponding portions of brain. When in many cases he found certain talents or traits of character to exist in the person with a particular portion of the brain developed, shown by prominence or fullness on the skull, he found that the same talents were absent or weakly manifested in those whose skulls were depressed at the same place. When the prominence existed in the other cases, he concluded that these traits of character were connected with a portion of the brain contained within the skull. Thus he had proofs both positive and negative.

He did not rest satisfied with the observations of a few persons, but extended them to thousands of persons, making casts and collecting skulls. To extend the range of his observations, Gall visited schools and colleges, insane asylums and prisons, and wherever he had hopes of getting persons distinguished for special talents or noted for anything peculiar. Their faculties were carefully noted, casts of their heads were taken, and special development recorded. Thus the science of Phrenology was really discovered through observations made upon prominences and depressions of the skulls, and ridicule was thrown upon Phrenology because its principles were thus discovered.

But this, instead of being a demerit to Phrenology, is its chief glory. If phrenologists had not taken advantage of the negative and positive proofs thus supplied by nature they never could have established a science of mind or character. The botanist takes advantage of abnormal development in flowers to clear up difficult points of morphology, and many important truths have been discovered in this science by such sports of nature which could never have been ascertained in any other way. Nature always supplies means for the ascertainment of truth, although these means may seem ridiculous in the eyes of some. The trouble too often lies not with nature, but with a certain class of scientists who prefer to make an abstruse problem rather than follow her plain teachings. Men may call Phrenology a science of bumpology because its principles were first suggested in this way, but it was only by these abnormal developments in connection with leading mental characteristics that a knowledge of the primitive faculties could be discovered; for it was necessary that the manifestation of one particular faculty should far outstrip in power and activity all the other faculties of the mind in order to ascertain what dispositions could come under that faculty. In other words, some means should be supplied whereby the function of one organ could be studied to the neglect, for the time being, of the functions of the other organs, so as to distinguish clearly what were the actions belonging to that organ from the actions belonging to the others. And this the great and small development of different parts of the head, called Bumpology, conveniently supplied. Yet

it ought to be remembered that although the organs and functions of the brain were correctly ascertained and their sphere of action and location discovered by special protuberances and depressions of the skull, that these protuberances can not be found upon all heads. These developments are abnormal. The harmoniously developed head does not have these special prominences on the skull, but there is no difficulty in reading character from such heads, as the location of each organ has been accurately ascertained by means of the abnormal developments.

THE BRAIN ACTUALLY EXAMINED.

Dr. Gall next, when the death of these persons offered an opportunity to get possession of their heads, removed the skull and found that the cerebral mass corresponded in every case with the abnormal developments of skull. He found that when there was no prominence of the skull, but a depression, the convolutions were small or entirely wanting, and where there was a protuberance of the skull, the convolutions swelled out and completely filled the cavity made by the protuberance. Thus the labors of the neurologists were at an end; a resort to clinical and pathological or experimental methods were not absolutely necessary. But Gall and Spurzheim, with that indomitable zeal to prove all things beyond a possibility of a doubt which ever animated their professional career, followed up their investigations by these methods. It would be a long task to enumerate the catalogue of cases confirmatory of the location and functions of the various organs they had thus established. Injuries to the brain, accidental or purposely induced, revealed the fact that the organs of the mental faculties had been truly located. Persons who had received a blow on the part of the brain where the phrenologists locate the organ of Color were known to be deprived of that faculty. So men who had been suddenly possessed with an irresistible desire to kill, or to gratify sexual love and other desires connected with the primitive instincts, were discovered by phrenologists on removal of the skull to have the portion of the brain under the skull, where the organs of such propensities were situated, diseased. Though the organs were first discovered by the shape and form of the skull, yet by repeated observations the distinct convolutions or parts of convolutions connected with special dispositions were accurately named and marked out. So that by the situation of the convolutions themselves without the aid of the skull, the analysis of a person's character could be given. Spurzheim gave such readings on several occasions.

The assertion, therefore, of Bailey and other philosophers that Phrenology is at best only craniology, or a science of the cranium, is not strictly correct. The phrenologists never attempted to connect the dispositions of men with developments of the cranium; they always maintained that the brain mass gave size and shape to the skull, and not the skull to the brain. This doctrine they proved by many facts. They showed, upon the removal of many skulls, that the convolutions did not all run in one direction, that some of them swelled out more in the middle than at the end, some ran transversely, vertically and some horizontally and actually moulded the developments of the skull to correspond with these portions. The fact that the size and form of the organs of the brain can be predicated by the general appearance of the skull does not necessarily constitute Phrenology a science of the cranium. The size and form of the muscles of the body may be determined through the skin; the space which the lungs and other organs of the body occupy is determined by measurements of their bone or skin covering; but does this constitute physiology a science of skinology or boneology?

But it has been asserted by some writers on mental science that Phrenology will have to give place to the doctrines deduced from the more accurate experiments of Goltz and others. It has even been asserted that if Gall and Spurzheim

were now living they would give up Phrenology and betake themselves to the experimental school. But this is purely a matter of conjecture, and there is nothing in the facts of the case to warrant any such supposition. That Gall and Spurzheim, if they were now alive, would engage in experiments similar to those of Ferrier and Goltz, is probable; but that they would decide these experiments to be more efficacious than their own method is monstrously absurd. While they lived they did not neglect any opportunity which they thought would prove or throw light upon the science of the mind. They employed the clinical, pathological, and galvanic experiments which gave results similar to those obtained at the present time by Ferrier and others; but they employed these methods, not because they thought them more efficient, but as an aid to their own system, and more especially to convince opponents who had a taste for such experiments. They always maintained that these methods were insufficient to determine the functions of the brain.

ARE THE METHODS OF THE EXPERIMENTALISTS BETTER?

The experimental school as conducted to-day offers no better method of determining the organs of the brain than the phrenological method. In order to establish clearly an organ and its appropriate function four conditions are necessary: (1) The probable location and size of the organ; (2) The natural language, action, or process which constitutes its function; (3) It must be experimented upon without affecting neighboring organs; (4) The organ when experimented upon must be in a normal condition in order to manifest its functions correctly; and a fifth condition might be added, viz., an extensive field for experiment and observation, which, although not as necessary as the four previous conditions, would seem requisite because of the vital importance attached to the deductions from the experiments. The experimental school, it is needless to say, can not comply with any of these conditions. They neither know the extent nor location of the organs they seek, whether they occupy a whole convolution or a part of a convolution as they experiment upon the convolutions in a hap-hazard manner. They have not systematically studied the language or processes of the organs they seek; hence their ridiculous interpretation of the responses they have obtained. They have exhausted the entire cerebral mass in the performance of such ridiculous functions as a center for wagging the tail, a center for the advance of the right foot, a center for twitching the eyes, which latter they call the organ of sight. They experiment under very disadvantageous circumstances. They have recourse to anæsthesia, which puts the organs of the animal in an unnatural stupor. It is not, therefore, possible to get the clear responses which express the function of an organ in the natural state. It is hardly possible to excite one organ by the electrode without exciting a neighboring organ. And it is extremely doubtful, nay, impossible, to get anything but bodily movements from these organs in such a condition and by such a process. How can thought, intellect, or emotion be communicated in this way? Indeed the science of the mind, as presented by these experimentalists, is nothing more than a science of electrical gymnastics. The cutting and mutilating of innocent animals to acquire a few gesticulations and twitches of the body and limbs, is, to say the least, reprehensible, and contrary to the best feelings of our human nature. The reader can easily imagine how difficult it would be for an animal subjected to stupefying drugs and deprived of parts of his brain and irritated by shocks of electricity, to express the various faculties of his mind. The extent of the field of experiment is confined to a few animals, and the experiments must be performed and the responses obtained before the animal dies. If these gymnastical performances and the ridiculous interpretations drawn from animals in stupor and mutilation, by a process revolting

and unnatural, are capable of superseding Phrenology, I should like to see the evidence. If the experimenters had taken Phrenology as an aid they would have been more successful; they would then have had some idea of the extent, location, and language of the organs for which they were in search. Even supposing that they could succeed in determining the functions of the brain in this way, they can only extend their conclusions to man by analogy, for public sentiment will never submit to have men experimented upon as they now experiment upon animals.

So far from the experimental school superseding Phrenology, it has much to do before it can arrive at any one of the demonstrated principles of Phrenology. In many cases the responses obtained by Goltz and Ferrier, when rightly interpreted, support the doctrines of Phrenology, and one of the latest announcements of Ferrier is that the phrenologists have good reasons for locating the intellect in the frontal lobes.

Not any of the inconveniences attending the experimental method is incident to the phrenological. Its field of observation is wide; men and animals in their natural state its objects of investigation. All the actions and language of the faculties can be gathered and systematically arranged. It knows the position and extent of the organs it seeks. It can summon the clinical, pathological, anatomical, and even the experimental school itself, to support the truth of its principles. The superiority of its methods is shown by the fact that it has already mapped out the convolutions of the brain into distinct organs and described their functions, and has built up a science of mind and character upon principles not yet disproved. Gall, like some other geniuses in other departments of knowledge, has mapped out the field of mental science so extensively that it will take a long time for men of moderate talents to reach the utmost lines of his demonstration. Much, no doubt, remains to be done. Phrenologists never claimed that their science was complete in all respects. Yet the survey has been made and the true road to travel is open, and, like the railway, may have steel rails in due time.

Phrenology being founded upon inductions from observed facts demands our investigation of these facts and disclaims to be investigated by self-consciousness alone. It is surprising that the gauntlet thus defiantly thrown down by phrenologists has never been taken up

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KRAO—THE "MISSING LINK."

IT is not many months ago that public attention was called to the discovery of the "missing link" in the shape of a strange being which had been found in Borneo and was exhibited in London. We were informed in phrases of gravity becoming a scientific disquisition that this strange "find" united animal and human characteristics in such a fashion that the doctrine of evolution now had testimony in its behalf which could not be gainsaid. The anthropologist and the scientist generally were of course deeply interested in the matter and awaited anxiously for further information, and a possible opportunity to see and examine the creature itself. But how has the matter turned out? Much after the manner of similar announcements which have been foisted upon the public in times past.

The strange creature is simply a hairy child about six years of age, an excellent specimen of hypertricopherosis, or superabundance of hair, cases of which have been recorded at intervals. The engraving represents the child as taken photographically, and she is described by a correspondent of the Leipsic *Illustrirte Zeitung*, who views her as a cross between the ape and man, as follows:

"Kra-o is about six years old; she is

of the same size as other children of her age, but of a finer build; thick, jet black hair covers her head and reaches down to the backbone, and forms a perfect mane on the shoulders; the eyebrows are wide, glossy, and silky, and the eyes are of a deep black with open pupils, and the iris is missing entirely, as in the gorilla; the resemblance to the face of the latter is very great and astonishing; the nose is flat, and has wide nostrils inclined diagonally toward the cheek-bones; the cheeks hang down and are baggy, and in them Kra-o stores her food and carries it about with her in the same manner as her cousins of the ape tribe.

"Her head, like the human type more than any other part of her body, and the intelligent eyes, the agreeably rounded mouth with the full lips, which can smile very pleasantly when Kra-o plays and talks, do not at all correspond with the ape-like body of the child. Kra-o is of a brownish-yellow color, and the hair extends from the crown of her head to the soles of her feet. She is generally very jolly, loves to play, and is more thankful than most children if persons take the trouble to amuse her. If she is molested and teased, her wild nature shows itself; she throws herself on the ground, screams, strikes the person, and finds great pleasure in tearing out some of her superabundance of hair."

With the engraving before us we can not see the resemblance to the gorilla which is mentioned above as very great and astonishing. On the contrary, the head is very unlike the ape in development of crown and jaws, and aside from the hairy growth, we'll warrant her a good, average specimen of children born in the Laos district of Borneo.

She is reported by those who have seen her in London as possessing fair intelligence, which is sufficiently demonstrated by the fact that she has acquired enough knowledge of the English language within a few months to be able to make herself understood; and this is an ample proof that, although her outward appearance has much of the animal, she has a bright mind and considerable intelligence. The ethnologist would look at once to the hands and feet for evidence of linkship in a case of alleged close relationship to the Simian form; in Kra-o we find simply well-formed extremities of the human type, and nothing of the claw-like monkey "hand," or prehensile foot.

LITTLE BIRD IN LONELY PRISON.

FROM THE GERMAN.

LITTLE bird in prison lonely,
Lonely heart within my breast,
Mourning for the spring-time only,
Both by sorrow's gloom distressed.

For the waving tree-top longing,
There from bough to bough to fly;
On a tender bosom nestling,
Guarded by a loving eye.

Little bird, sing forth thy grieving
Till thy breast can throb no more;
Beat my heart against thy prison
Till thy last faint sigh is o'er.

LYDIA M. MILLARD.

GOD, IMMORTALITY, AND DUTY.

THESE three words combine the talisman of destiny. They fill up the three sides of human responsibility, the triangle hung up in the heavens for the guidance of all souls; and if one part is effaced the two others are rendered useless. Like a perfect triangle one part is equal to the other. If God is removed, Immortality fades; and if Duty is struck out, man becomes a solecism in creation —a being severed from the well-being of the whole, with intellectual and moral faculties serving no perceptible purposes. With God denied and Immortality relegated to the limbo of Agnosticism, certain writers might marshal a fine array of glittering verbiage; but addressed as they would be to mere sentiment, to a conscience subject to no law or Lawgiver, no approval would be given from the heart of humanity. Those who talk in this way forget that they have stolen the plumage of their speech from the Bird of Paradise, and that this recording pen was plucked from its ample wings.

A very forcible writer, in giving a delineation of the genius of George Eliot, tells us of her impressions when walking with her on a rainy evening in May. As if stirred somewhat from her wont, she took for her text these three words, so often used as an inspiring trumpet-call to mankind, saying with terrible earnestness, "God, Immortality, Duty." "How inconceivable was the first, how unbelievable the second, and yet how peremptory and absolute the third!" She believed in the sovereignty of imperial and unrecompensing law. We are convinced that the race will never be obedient to a law divested of all mind, to that which neither rewards nor punishes; which is the expression of no will and devoid of all sanctions. If there are laws which

carry with them recompenses of weal or woe, they are as surely the expressions of a Lawgiver as was Magna Charta the outcome of the minds of the barons of King John.

She believed "in the expansion of human fellowship into an impulse strong enough to compel us to live for others, even though it be beneath the on-coming shadow of eternal night." This reads well, but where is the proof in the work? Atheistic philanthropists are and always have been very rare. No better test of morals was ever given than "Ye shall know them by their fruits." We have looked in vain over the earth to find in the outcome of atheism the institutions of self-denial and benevolence. Grasses do not grow on thistles.

Poor Sarah Martyn, the dressmaker, and John Pounds, the cobbler, left behind them institutions for the elevation of their race, but with all her literary remuneration, what fabrics of Philanthropy remain to speak for her principles to coming times? What duty did she render to the sacredness of the marriage relation? In labors of love for mankind she would appear poor indeed, contrasted with a Countess of Huntingdon, an Elizabeth Fry, or even an Eliza Garnaut.

"George Eliot," we are told, "recognized the terrible probability that, for creatures with no future to look to, advance in spirituality may oftenest be but advance in pain. She saw the somber reason of that grim plan which suggests that the world's life-long struggle might best be ended—not indeed by individual desertions, but by the moving off of the whole great army from the field of its unequal war—by the simultaneous suicide of all the race of man." Surely the Lord or Nature or fortuitous molecule have made all men in vain! The whole race had better commit suicide. Life is not worth living. Oh, ye Agnostics and Atheists! Such philosophy could no more produce the martyrs and confessors of the race than an Alpine glacier could germinate an oasis! Advance in spirituality would surely be an advance in suffering. To have a vision of perfectibility never to be realized; to see what should be, yet never can be; to feel as such must feel that sublimity, veneration, conscientiousness, imagination, and hope were only given to tantalize the intellectual and moral faculties, would be like taking a man from Nebo to the Stygian Erebus.

> "Oh, starlight science, hast thou wandered there,
> To bring us back this message of despair?"

Science, did we say? No, Science is knowledge; while such is but the expression of a morbid intellect wandering where it should never enter; following blind Reason where Experience should be the guide; where the intuitions are better instructors than barren speculations; and especially where the movements of Instinct, if carefully followed, can not lead astray. Does a child reason in order to come to its mother's breast? Does Reason lead the migrating bird to seek a warmer clime from winter's cold? The instincts of human nature are the impressions of the finger of the Almighty Father guiding us to our sure destiny. Had these two representatives of purely intellectual womanhood, George Eliot and Harriet Martineau, been hallowed with the cares of maternity—had they watched the expanding faculties of a beloved child, gazed into the eyes of a little one sinking into the invisible, and laid its loved form into the narrow grave, they would have heard still small voices from a region which their barren skepticism would have receded from as the needed consolation from the Life Essential.

She wrote, "I have no controversy with the faith that *cries out and clings from the depths of man's need.*" What is it that cries out and clings from these depths? What but the unerring voice within; that which an apostle calls "the stretching forth of Nature's neck" for better things to come. We may distrust Reason, but not Nature. Leaving her logic in abeyance, in writing to a friend

under the first anguish of bereavement, she says, "For the first sharp pangs there is no consolation." But soon her heart speaks out true to its instincts. "All the experience that makes of my communion with your grief is summed up in 'God bless you,' which represents the swelling of my heart now that I write thinking of you and your sense of what was and is not." Here we have an unsophisticated touch of true nature; for what is nature but the Divine mode of operation?—and had she listened to this more, her questioning atheism would have been silenced. The outburst of the Divinity within will well up in the heart if left to itself. The Atheist of the Freethinkers' Convention in Watkins, on receiving a donation, uttered a "God bless you!" and doubtless if this class of thinkers believed there is no God, the necessities of human nature would compel them to proceed to the fabrication of one. Priests never made a Deity, but the people have made the priests. There is no creed so pitiless as that which would eradicate from the human heart that which cries out from its depths of need to the Governing Ruler of the Universe. The tendrils of a rooted tree feel their unerring way to the river's side for sustenance; and are the aspirations of the human soul less guided? Does that Power which never deceives a germinating plant, feeling its way to the surface for light and air, mock the tendencies of a thinking mind?

We are told, "She held there was so little chance of man's immortality, that it was a grievous error to flatter him with such a belief." How did she know that there was so little chance? From human probabilities? But they will be found generally on the other side. To say that there were no probabilities of a future state, or immensely preponderating ones, would be a sin against all evidence. Probabilities have guided Discovery, Invention, and Commerce to their successes, and that they have failed in the search of Immortality would be the affirmation of prejudice. The doctrine can be tested by experience. There are vast numbers who can no more doubt Immortality than they can Mortality. If this fine writer never breathed its air and felt its powers, more's the pity. A man can not doubt his own experience, and there is no greater folly than for an individual to set up his Agnosticism against another's knowledge. If one receives a telegraphic response beyond the seas, he can not doubt that it was dictated by intelligence. Leaving probabilities, it may be affirmed that we have demonstrations of the life beyond the tomb, and yet Mrs. George Eliot would esteem it flattery to tell a sorrowing mother over the bier of her child, a dying man lingering on the border land, or a broken-hearted mourner for the light of his household just gone out in time, that there is a better life beyond this as a counter-balance for the evils of the present. We would rather believe with Addison that with less proof it is wiser to hold than reject it. That can not be an evil which makes mankind everywhere happier and better, and until we have proof of its non-existence, it would be an unspeakable evil to reject it. To admit the fact is to love existence for its highest purposes. All truth reveals the Creator, and prompts the hope of a perpetual supply. Tell a man that tomorrow will be the end of him, and what reason can he have for thankfulness? All the emotions proper to a moral and religious nature imply deathlessness; as reverence, love, conscientiousness, and hope. We would not desire this extinction in any being; and to go to a fellow-being and say, "Your desire for continuance in virtue and happiness is very commendable. You would no doubt desire a continuance of your being beyond the grave; for the prospect of future happiness is certainly comforting, but growth in spirituality is only progress in unnecessary solitude. The fact is, you are nothing but an animal, and you will soon be as if you never were; therefore, put a stern face upon your despair!" such is all the consolation such principles can

convey; and Duty, so much talked about, is but submission to annihilation. It would place it in an exhausted receiver where it could not breathe. The doctrine received would be the imposition of a sunless day, with a nightmare on all moral advancement. It would be the whirling of the temperate and torrid zones into an eternal Arctic. Without God there would be no religion; without religion there would be no morality—all its standards and motives being removed; and without morality the world would become an Aceldama. We wonder not, when we read this statement of her own case, that there were many "who could not readily acquiesce in her negations, nor range themselves unreservedly as the *fellow-workers of her brave despair*."

So we say the banner of despair is not our excelsior. It will never be the device of the world's philanthropists and regenerators. Negations never embolden virtues. Unbelief is no discoverer or inventor. It never gave the world a spring carriage, a saw-mill, an iron steamer, a railroad, or an electric light. It can only aim at the destruction of all the results of martyrdom, and the triumphs of faith which have made the world the theater of the noblest deeds.

REV. JOHN WAUGH.

LOGIC IN COURTESY AND HABIT.—Plain speaking is considered a duty by the Quakers, but they do not practice it as much now as formerly, perhaps. Yet we now and then hear of a good illustration of its effective use.

Recently a Quaker was traveling in a railway carriage. After a time, observing certain movements on the part of a fellow-passenger, he accosted him as follows:

"Sir, thee seems well-dressed, and I dare say thee considers thyself well-bred, and would not lower thyself to do an ungentlemanlike action, wouldst thee?"

The person addressed promptly replied, with considerable spirit—

"Certainly not, if I knew it."

The Quaker continued:

"And suppose thee invited me to thy house, thee would not think of offering me thy glass to drink out of after thee had drank out of it thyself, wouldst thee?"

The interrogated replied—

"Abominable! No! Such an offer would be most insulting."

The Quaker continued:

"Still less would thee think of offering me thy knife and fork to eat with, after putting them into thy mouth, wouldst thee?"

The interrogated answered—

"To do that would be an outrage on all decency, and would show that such a wretch was out of the pale of civilized society."

"Then," said the Quaker, "with those impressions on thee, why shouldst thee wish me to take into my mouth and nostrils the smoke from that cigar which thou art preparing to smoke, after sending the smoke out of thine own mouth?"

TRUTH.

ROLL on, thou mighty tide of truth,
And deluge all the land;
Sweep error from those honored posts
Where now it holds command.

Roll on, roll on, nor cease thy flow
Till every seed shall die,
Of worthless tares, and bitter fruit,
Sown by the enemy.

Too long already has this tide
Set back upon its source;
Still it is gaining added strength,
And a resistless force.

And when the rains from heaven descend,
'Twill swell a torrent deep;
And foam and dash impetuously,
And every barrier leap.

Then raise the flood-gates, free its course,
And let it onward go!
The thirsty earth will drink it in,
And better fruits will grow.

Why should we spend our precious time
In beating back the truth;
And see grim want and famine gaunt
Still stalking o'er the earth?

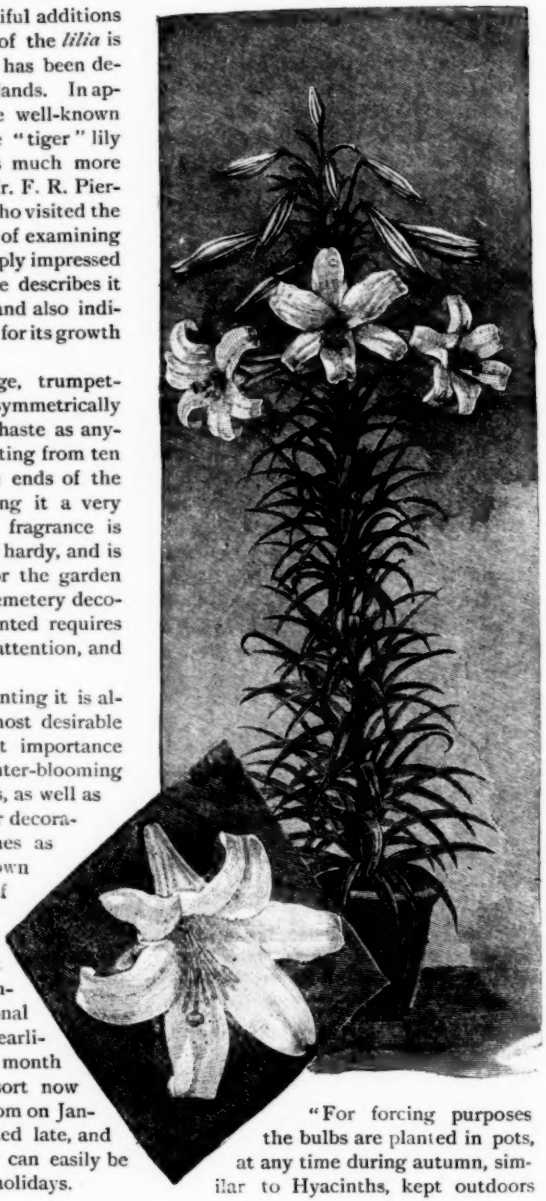
Why not set free this blessed stream
To irrigate the land?
Why not go into all the world
Obeying Christ's command? A. E. B.

THE BERMUDA EASTER LILY.

ONE of the most beautiful additions to the large family of the *lilia* is this recent variety, which has been developed in the Bermuda islands. In appearance it resembles the well-known *lilium longiflorum*, or the "tiger" lily of our old homes, but is much more beautiful and striking. Mr. F. R. Pierson, of Tarrytown, N. Y., who visited the Bermudas for the purpose of examining it in its native soil, was deeply impressed with its rare qualities. He describes it in the *American Garden*, and also indicates the proper treatment for its growth in our gardens:

"The flowers are large, trumpet-shaped, pure waxy white, symmetrically formed, as beautiful and chaste as anything can be imagined, lasting from ten days to two weeks. The ends of the petals are recurved, giving it a very graceful appearance. Its fragrance is delightful. It is perfectly hardy, and is one of the finest plants for the garden border, shrubberies, and cemetery decoration. A bulb once planted requires very little after-care and attention, and lasts for years.

"While for outdoor planting it is already recognized as a most desirable acquisition, its paramount importance lies in its value as a winter-blooming plant for market purposes, as well as for conservatory or parlor decoration. Three or four times as many flowers can be grown with the same number of plants and the same expense as from the old varieties—a very important consideration with the commercial florist. An additional superiority consists in its earliness, being more than a month earlier than any other sort now grown. I had some in bloom on January 22d, from bulbs started late, and I am confident that they can easily be forced for the Christmas holidays.



"For forcing purposes the bulbs are planted in pots, at any time during autumn, similar to Hyacinths, kept outdoors

until the pots are well filled with roots, when they are removed to a higher temperature. The soil should be kept moderately moist, and receive an occasional application of liquid manure. For outdoor culture the bulbs may be planted in the spring or fall, but unless they can be planted very early, the latter season is to be preferred. The soil should be deep, mellow, and rich, without containing fresh manure, and must be well-drained. The bulbs should be planted about four inches deep, and be mulched during winter."

He mentions a plant which he raised last year, which produced seventy perfect flowers; but even that was exceeded by one brought from Bermuda, which bore one hundred and forty-five blossoms on a single stem, and was mentioned in the New York papers as a "Floral Wonder."

A GREAT LEVELER.

AT the present day when the demand for workers with hand or brain is met at once by an almost unlimited supply, the popular suburban impression that a great city is the best place in which to further one's fortune, seems as firmly fixed as ever. Neither the assurances of friends, nor the warnings of the press avail to dissuade young men in the country from leaving their homes and going to the city with the belief that they are needed there, and that the chances are all in their favor for a start which will surely and quickly end in opulence. In this belief they are too often aided by parental blindness. The doating father or fond mother sees the budding of genius in the son, and feeling that it will be at least cramped, if not blighted, in the quiet country village, or that it will not have large enough scope in the country town, lends a willing ear to the suggestion that the boy betake himself to the great city, and there develop fully the latent ability that is to give him a high place among men.

This would be well—very well—were it not for the unfortunate fact that ten thousand others are thinking the same thing daily, and almost as many carrying it into effect. Great cities attract the very best talent the country can produce; and as a natural result, when a young man of mediocre ability comes upon the scene, he finds himself compelled to compete with those who much surpass him in attainments. In New York City a person must be well qualified for any position worth having, by experience, education, and natural adaptation, else he will be pushed aside to give place to another, whom his employer will have no trouble in finding, and who possesses the desired qualifications.

The city is the place where a man is sure to find his intellectual level. By a law of mental gravitation he will rise or sink according to his ability, until his true plane has been fixed, and there he will stay; and according to his ability, so is his acquirement of the object which brought him to the city, viz., money. It is impossible to keep down, anywhere, a man with real capacity; and the health and spirit to exercise it. His employers will see and recognize it, and should they be so obtuse as to pass him over, it will be known and felt elsewhere, and ere long he will unexpectedly find himself in demand.

Every one here must stand upon his own foundation, and according as that foundation has been laid in truth, honor, virtue, and ability, so may his success be. We do not wish to be understood as asserting that ability of head or hand is fittingly compensated in the cities, for it is not, save in some instances that form a very small minority; but we do say that ability, coupled with a sincerity of purpose, and a determination to make that ability known, felt, and acknowledged, will, in the great majority of cases, conquer the difficulties that beset the path, and finally secure for a man the respect of his associates. W.

FREDRIKA BREMER.

THE most inadequate biography of any celebrated woman is that of Fredrika Bremer. A small volume comprises letters, unpublished sketches, autobiography, and a brief account of her life and death, written by her sister.

Doubtless much more was written of Sweden's most popular author, by her countrymen, than this unpretentious volume which alone reached translation and the United States. But as America's

courted guest in 1850–51, associating with Emerson and Channing, Lowell and Whittier, Lydia Maria Child, Catherine Sedgwick, and Mrs. Sigourney, our interest impels a closer inquiry into her character.

America was her other home. She loved its people. She felt its newness and brisk enterprise invigorate her own spirits. And when she departed, taking with her the friendship of America's noblest representatives, she sang unto the Lord that new song which we find immediately after in her "The Homes of the New World," "The Four Sisters," "Father and Daughter," etc.

No works of one author differ more widely in their views of life than Fredrika Bremer's before and after her visit to the United States. And precisely because our people, institutions, customs, and laws have made such a deep impression on the whole tenor of her after-life, do we want to know something more of her.

To have her works is to have her. They are all mirrors reflecting herself with all her aspirations, fears, doubts, and humility. In her the spirit of inquiry rules supreme, and a warm, enthusiastic faith in humanity inspires her eloquence, infusing charity into the hardest, and hope into the saddest, heart.

Her earlier novels, apart from their graphic delineation of Swedish character, indicate that restless, undefined longing of her searching spirit which was the consuming fire of her prisoned girlhood, and the powerful impetus of her matured activity. First, it is the chafing spirit crying: I seek something great and good; I long to do something for eternity! Later, the rounded, deedful life which says so eloquently: I am finding, I am accomplishing, I am at peace. The works of her youth portray her mind's growth, her soul's struggles against the bondage of blind faith, and the joyless freedom of utter unbelief. Those of her mature years reflect her life's light, sending abroad the glory of its hope and the warmth of its love.

Hers is so eminently the history of all active, inquiring minds in their premature grapple with questions which have baffled the wisdom of ages, that the sequel is an anchor to all unquiet ones. It is, therefore, in that stage of intellectual growth where the imagination yields to

inquiry, and romances are laid aside for speculative philosophy; where the mind, seeking vainly for the ultimate, drifts out upon that shoreless sea of doubt which means torment to the strong and indifference to the weak, that acquaintance with Fredrika Bremer will be most timely and beneficial. She will not, indeed, solve those dark problems of life and futurity with which sages of all centuries have vainly wrought. But where they only torment with their vague surmises and unwillingness to confess the limitations of human wisdom, she soothes by that very confession. She quiets the troubled spirit with the balm which lies in the sympathy of mutual wants. Her genius was no lofty loneliness inspiring loveless awe and forbidding closer communion. It was a lowly, world-embracing benevolence, soliciting love and happiness for all as for herself, and inspiring humanity with a sustaining faith in the eternal elements of good which will eventually right all things and bring the unfathomed from the deeps.

In this sustaining hope she lived and worked, and would have others live and work to cast away the barriers to life's fullest enjoyment. To bring into full play only the good, eternal elements of our being, thus concentrating the strength of those harmonies which work the happiness of mankind, was her life's object. She endeavored always to find the virtue before the vice, to encourage the good before she condemned the evil. If there was any good in mankind, that she would find and show the misanthropist. If there was any love, that she would bring forth and have the whole world sun themselves in its genial warmth. One never reads her descriptions of "The Homes of the New World" without being animated with a fresh confidence in the future of humanity. When she leads us to the fireside and the forum of the American people, we know ourselves amid the destined progenitors of universal liberty. She points to the beauties, the resources, and the rugged strength of the youthful world with glowing promise. And if dark objects would thrust themselves before her, she wrote of them with the hope which has since been realized. She never called attention to an evil without suggesting a remedy. She never depicted the misery of vice without a visible effort to alleviate it. The bright characters of her novels are embodiments of her own sentiments--full of faith in man, and enthusiasm for all things noble and progressive. They are persons whom one has but to see to love and trust forever. Her dark characters are only weak—a little lower on the stair of progress, a little slower climbing up; but not depraved—not damnable. She gives no black caricatures of life. Occasionally she allows herself a little humor at their expense; generally she gives the whispered word of hope and consolation and the hand leading upward. For these "children of the twilight," as she called them, her heart was full of hope and charity, as for the good it was full of love and reverence.

In the philosophy of life, Fredrika Bremer discards the method of tracing causes in order to apply remedies. Never mind vices, thought she: they may die of neglect. In diligently hoeing our cornfield we are satisfied to know that the weeds will be exterminated without inquiring into their nature or classifications. If it is impossible for the mind to refrain from inquiry, it is equally impossible by inquiry to reach the source of things, and life is too short to waste it in speculation, when, to foster the known good, is to drive evil and every negative to man's happiness from the field.

There is, perhaps, no author who has been so loved by her generation or exercised so beneficent an influence over all minds that came in contact with hers. It is one thing to admire, another to love, an author. Genius calls forth the former, motive the latter. Genius lives longer, motive draws nearer. The gaze of centuries may dwell in awe upon the dazzling light of genius, while the hearts of only one generation may be warmed by the glow of a noble motive. But who would

wish to gaze forever at the sun? and who would be without the fire on the hearth, which serves, as nothing else can, the need of the occasion! Fredrika Bremer was a writer of motive and impulse rather than of genius. She was no sooner known as the author than she was loved as the individual. One followed her narratives to gather hope and strength in the footsteps of her own struggling, triumphant, life. She was no overwhelming genius, as Madame de Stael; no revolutionizing power, as Harriet Martineau; no magnificent delver in darkness, as George Eliot. But she was what neither of these ever could have been—our household angel, our daily comforter. When we have read their voluminous wisdom, to find the brain perplexed with ponderous questions they could present, but never solve, and the heart heavy with that vast sense of loneliness which we invariably experience in contemplating their heights fortified with stoical strength, and our depth surrounded with innumerable up-hills of ordinary life, how infinitely precious is the extended hand! how dear the voice which says, I am like you: I suffer, I weep, I struggle, I am tempted to despair like you. But come, love with me. Love has rent the veil in the temple of worship; it will rend the mystery in the temple of truth whose innermost sanctuary is love, and you and I will see it before the watchers on yonder barren heights!

It is this all-embracing love; this solicitude for suffering humanity; this sympathy with restless, searching minds which distinguished Fredrika Bremer from other writers and drew her readers in a circle of sweet intimacy around her. She was parent, teacher, friend, lover. Herein lay the secret of her power—she was humble in her greatness, and wrote of all classes as she addressed all classes. What great geniuses have said in a great way to great minds, she has simplified to the common understanding. And the problems of life which greater minds have vainly endeavored to solve, she has taught humanity to lay, in hope and resignation, at the feet of the Sublime Revealer with none to prove her teaching false.

There is a period in our life when character receives its final shape. Education brings it forth, experience and knowledge chisel it into relief. But that which shapes it is the influence of some strong impression. Fredrika Bremer's writings are peculiarly adapted for the transition period from youth to maturity. She arrests the eager mind with her questionings; then—unlike extreme philosophers who search forever with the courage of rare superiority, and discourage and fatigue ordinary minds—reaches for the heart, and teaches it to feel what the understanding can not comprehend. She lets the inspiration of the soul finish what the intellect began, saving both by leading them into harmony with all the elements of being. The impression she makes upon our character is indelible and sustaining. We eagerly follow her footsteps on the path of inquiry, and when with her we almost faint with fatigue and discouragement, she rests by the fountain of contemplation. "Oh, there is happiness, devotion, bliss in this path which only he feels who has wandered along it!" is her joyous exclamation, and who that has walked with her does not repeat it with all the fervor of grateful sympathy! Reconciled with self, with the world, and creation, we, too, embrace the universe in ecstasy! The elements of immortality are at work within us, and we have a foretaste of the eternal, the perfect, the blissful in contemplation! We are only atoms among atoms, say philosophers. But self-conscious atoms, with the eternal and divine within to work its own perfection, says Fredrika Bremer. Light! more light! has been the cry of sages of every age, who had not light enough to see the source of light. Love! more love! has been the cry of Fredrika Bremer, who felt and found the primal light, the illuminator of the universe, in the soul's lamp of love. Its eternal spark nas gleamed through dark space and kindled chaos. It still gleams through every atom of the universe and kindles every power into action. Love was her "open sesame!" with which she penetrated the

deepest cavern of life and brought forth treasures with which she opened the human heart and illumined it with magic rays. Through love to light, through light to peace and joy, she wandered, leading us by the hand with the tender solicitude of a mother; discoursing by the way with the affectionate confidence of a sister; encouraging, animating with the glowing enthusiasm of a friend. Others there may be with teachings dressed in loftier lore and steps directed to higher mountains, but they will not accomplish more than she who has taught us that life's sweetest lesson is the love with which she has worked so many healing miracles in our hearts. Where others spur, she animates; where others dictate and censure, she pleads and compassionates; where others exact homage, she embraces. From her own heart s love she fills ours, that we also may love mankind, and truly loving, the object of life is reached—we truly live!

BERTHA A. WINKLER.

THE MEDLEY OF LIFE.

THERE is in this world a strange mingling of measure,
A strange combination of sorrow and pleasure.
For a moment we lie in the lap of repose,
And then we are called on to battle with foes.
The one on whose friendship we wholly rely,
In our moments of need is the first one to fly;
And the hopes that we cherish, the plans that we lay,
By blasts of misfortune are driven away.

He who by his genius and courage would rise,
Must travel in gloom beneath storm-clouded skies;
The cold look of scorn chills the flow of ambition,
And fame seems a child of high birth and condition.

The cruel arm of power oppresses the weak,
And men suffer torture for the truth which they speak;
For one man's offenses a nation must bleed,
In the name of religion men wage war for greed.
The warrior for conquest, with his sabre all red
With innocent blood which in madness he shed,
Claims the blessings of God at the altar of prayer—
Soldier-saint with his spoils Eden-glories to share!

Kind Nature her lessons of wisdom discloses
Like aroma united by fresh blooming roses,
But creed, caste, and bias are firmly combined
To circumscribe thought and thus fetter the mind;
With faith in the mystic men stand on the brink
Of Truth's precious fountain refusing to drink.

But in hours of darkness when we fall by the way,
With no voice to pity and no hand to stay,
When energy fails us and hope's at an end,
Kind Providence sends unexpected a friend.
When winds rage in fury and billows are high,
And that fierce savage, Thunder, is rending the sky,
A soft voice within us causes terror to cease,
And a heavenly messenger whispers us, "Peace."

C. C. COLLINS.

AUNT ELLERY'S IDEAL.

MRS. ELLERY'S plump and dimpled hands were making quick work in disposing of a heap of clean clothes, piled upon the dining-room table. She sprinkled and folded and rolled and packed away in a clothes-basket one article after another with a speed, a grace, and a heartiness which at last moved her observant young companion to remark:

"Why, you do that exactly as if you liked to do it!"

"And I do like it," Mrs. Ellery replied with a bright glance. "Why not? There's nothing more delicious in their freshness and fragrance than clean clothes, soaked through and through as these are with pure air and sunshine. It's packing away just so much purity as well as utility,"

and she spread an immense Turkish towel over the folding-board. "See there, Kittie!" As she spoke she pointed to a long line of exquisite color flickering along the towel — the effect of a stray sunbeam striking the crimson finger-bowl which held the water.

"Mother wouldn't let me use such a thing as that half a minute for such work," and Kittie Hale regarded the bowl quite solemnly. "Isn't it lovely?"

"With proper care—and one would be ashamed not to take proper care of everything—there can be no more harm in using this bowl than the commonest, ugliest earthern one. I've been enjoying the bowl quite as much as the clothes as I went along. Now imagine these all ironed and layed away in piles in the drawer ready for use—clean, smooth, and sweet!"

"But mercy, Aunt Harriet, I shouldn't think you'd want to think about the ironing till the time came to do it. I think it's hateful work. Everything would go rough-dry if I had my way."

"Why, Kittie, there's nothing in all my house I enjoy so much, as the washing and ironing. There's nothing pays so well while you are doing it and after it's done."

"You *don't* mean *washing?*" Kittie Hale's tone matched the expression of her face.

Mrs. Ellery gave a little chuckling laugh. The dimples in her cheeks—and knuckles—were her niece's especial admiration.

"Don't I though? Why, I positively revel in soap and water. Of course dirty clothes are just—dirty clothes. Nobody likes them any more than they like—well, meanness or wickedness in the person who wears them. Sin and dirt always seem to belong together, somehow—the great negations of the physical and the spiritual world. I like to wash soiled clothes just as I'd like to cure a patient if I were a doctor, or reform a criminal if I were a minister. It's the same principle, you see — taking something that's soiled or diseased, and therefore useless or harmful, and making it clean and whole and strong and good for something." Mrs. Ellery's face flushed, and her eyes sparkled—as they always did when she talked in that strain. Her niece liked to watch her so.

"Then is there anything lovelier than soap-suds—the white, bubbling, flashing, evanescent thing—and such a purifier as it is! I enjoy it as I used to when I was a child, only now I haven't time to watch these prosaic bubbles catch all the colors of the rainbow. But I know the colors are there all the same."

"You are the queerest woman, Aunt Harriet!" Kittie Hale gave a very palpable sigh, as she closed the book which for a long time had lain unheeded on her lap. Propping her chin on her hands, she leaned her elbows on the table, and resumed:

"I wonder if my own mother would have been like you if she had lived. I suppose I could have somehow endured it better if she had been. But you've no idea how I hate all that drudgery at home! I haven't words to express it!"

Mrs. Ellery's heart yearned over the young girl whose daily companions were an indifferent father, a coarse, matter-of-fact step-mother; whose home was poor not so much from lack of money as from the want of taste and refinement; sympathy, tenderness, and appreciation of the graces of life—those things which can be had without money and without price, being too priceless for any money to buy.

Kittie Hale was half sick in body and wholly sick in soul. It was her step-mother's clumsy understanding of the fact that she was all wrong somehow, which induced her to allow a brief visit to the Ellerys. "Har'et's too high-falutin for my notion," she commented in her hard high voice whenever the lady was spoken of, "but she's good enough in her way." To go from her own home to that of her aunt's, was to Kittie, as she vehemently expressed it, "going from earth to heaven, for it don't seem as if you lived in the same world with mother!" She always found it hard to pronounce that word, yet this second wife was as kind to

her husband's daughter as it was in her nature to be. Kittie could not express what it was that tried and irritated her so. Her most lucid statement was that her step-mother was "so different from Aunt Harriet. When I see you do housework," she said, "it doesn't seem to be the hideous nightmare of a thing that it is at home."

"I grow tired of it sometimes," her aunt said quickly, noticing the deepening gloom on the young face. "I think it is the constant repetition of its duties that makes it tiresome to almost everybody. It's not like many kinds of work, though I try never to forget that it's just as necessary and just as useful as any. I wish clothes would keep clean a little longer, and rooms didn't get dusty quite so often, and I'd be perfectly reconciled to wash dishes once a day instead of three times," she said with a half laugh and a droll inflection in her tone. "There *are* things quite as enjoyable to me as a broom, a churn, or a flat-iron. You know how I like to draw, for instance; and fancy-work—embroidery—why, I feel quite wild sometimes when I realize that perhaps never, as long as I live, shall I have any more time for embroidery—with all the beautiful materials and patterns that have come into existence since I was a girl."

"Well, if that is the way you feel, Aunt Harriet, how do you manage to keep so comfortable and contented?"

"Manage is a very good word, Kittie," Mrs. Ellery replied. "I try to manage my tastes and desires, as I would a lot of unruly children, and sometimes I have my hands full. I've always felt that I would rather be an artist than anything else in the world; but that, evidently, wasn't the work designed for me to do. But if one has artistic tastes, she can use them and enjoy them, too, without painting pictures or embroidering cushions. I try to get every bit of comfort I can from everything I have to do. When I was taking these clothes off the grass, I enjoyed the clouds and the trees and the flowers over there in the garden—why, I was going to say, as much as the woman who paints them!"

As she finished speaking, she folded the last garment and laid it in the basket.

"I don't believe mother knows one tree from another," was Kittie's comment in a very bitter tone, "and this spring she planted lettuce and radishes, where I wanted pinks and geraniums. She cares a good deal more for what she has to eat, than for any flower that ever blossomed."

"But couldn't you see any beauty in the lettuce and the radishes?" Mrs. Ellery inquired. "I want to get some for tea. I'm glad you spoke of them. Take your hat and come with me. You've not been out of doors to-day."

The dispirited girl rose slowly, and as if she would much rather remain in her comfortable rocking-chair. It was still quite hot, and they worked faster than they talked, glad to get into the house again, where Mrs. Ellery proceeded to set the table for the early supper.

"Now see if that is not more satisfactory than one rough-dry, as you would have it, Kittie."

The snowy table-cloth had been ironed in creases which formed great diamonds.

"That's one way in which I indulge my fancy for geometrical designs," her aunt remarked, "and it doesn't take ten minutes extra time, either. The napkins are another," and she folded each into some fanciful shape and placed them in the goblets.

"Mother always keeps the goblets for company," Kittie remarked. "We use coarse, clumsy tumblers. Milk never tastes at home as it does here."

"Care, again, you see, as I said about the finger-bowl. Glass and china don't wear out. If you choose to be careful of them, why shouldn't you use the best you have for every meal you eat?—if you would really enjoy the meal more because of it. For my part I like to see a table look wholesome, appetizing—artistic, if possible. Eating isn't the gross animal thing—not wholly—that so many people make it. I enjoy these goblets and glass dishes in the same way as I do the vases and the card-receiver in the parlor, though one may hold apple-sauce and

the other apple-blossoms. The apple-blossoms might inspire me to paint them, but I couldn't paint very long or very well without apple-sauce or something more substantial, to sustain me physically."

Kittie Hale nodded her head appreciatively. She even smiled a little at her aunt's earnestness.

"I like bright silver, too; well enough to sit down and rub it when I'm too tired to stand up and do something else; and it's almost as much pleasure to polish a silver spoon as to decorate a wooden one. Cups and saucers—cream-pitcher and sugar-bowl—I hate to see them huddled on to the table hit or miss, and as if they needed the Riot Act read to them, when they might just as easily and quickly be placed so as to look at home and on good terms with each other."

"That cream and that maple syrup look real lovely in those pretty glass pitchers, Aunt Harriet."

"Yes, and fruits—how much more attractive, and really suitable also, they look in glass dishes. Common things are no less beautiful because they are common. That is one of our delusions. See the different shades of green in that lettuce. Look at the edge of the leaves. There's beauty in every growing thing. Why, I think potato-blossoms are pretty. So would everybody, if they were not just—po..toes! And the amazing variety! No two things alike in all this great universe."

"You like to cook, don't you, Aunt Harriet?" Kittie asked in a tone which implied that her aunt generally liked disagreeable things.

"Yes, I've grown to like it. I knew I had to do it, all my life, perhaps, and I made up my mind that it should not always be drudgery if I could help it. When I found another name for cooking and called it creation—for that's just what it is—when I realized that in the ingredients and proper proportions of a good cake or a good pudding was the same principle of selection and arrangement which goes to the writing of a book, the painting of a picture, or the building of a house—why, it was one of the revelations of my life. I can't tell you what a help and encouragement it was, and I've held on to it ever since."

"But the house lasts, and the biscuit—these aren't gone yet, but they will be by the time Uncle Frank and the boys have finished supper."

"The biscuit lasts as long, I've no doubt, in proportion to the time and the thought given to it and the purpose for which it is made. At any rate, I like to think so. It will help make blood and nerve and muscle—it's almost as plain as bread, you see—and none of us can tell how much good your uncle and the boys can do on the strength of the food they eat."

"They're coming up from the barn now," Kittie said suddenly. "They'll notice that there's a clean cloth on the table, besides seeing what there is to eat. If father ever noticed anything, or cared anyway, it would make some things so much easier!"

It was nearly an hour later before Mrs. Ellery and her niece had a chance to renew their conversation, and it turned upon Kittie's especial detestation—dish-washing.

"Nearly all supper-time I was thinking over what you said about washing and ironing, Aunt Harriet. I suppose that's what you mean by finding the ideal in everything. But if there's a place on earth where I'm positively sure it can't exist, it's in a dish-pan!"

"The situation that has not its ideal was never yet occupied by man," Mrs. Ellery quoted softly. "One of our greatest philosophers said that. If it is true, it is no truer of the astronomer with his telescope in his observatory, than of the girl with her pan and hot water at the kitchen sink."

There was a significant pause for a minute while Kittie wiped a china cup and admired the order of her aunt's shelves.

"I suppose," she said at last, quite slowly and as if weighing the matter, "when I get rested, and feel a little stronger, and learn more of your way of

doing things, why, then perhaps—perhaps I can find the ideal in a dish-pan!"

"It is surely there, my dear. I have faith to believe that you will find it," and, with a smile, she touched the tender troubled lips with a kiss which was a blessing and a benediction.

CAROLINE B. LE ROW.

THE DUDE.—*Our Continent* thus describes this recent development of New York society: "A new species of young man has lately become sufficiently numerous in the streets of New York to demand classification as a type. The time-honored and now somewhat obsolete terms of 'dandy,' 'swell,' 'cad,' and so on, even when qualified and intensified by the adjective 'howling,' do not seem to meet his case; so the great slang-loving public invented a name for him, which quickly became current, and has now found its way into print. This young man seems first to have attracted notice by means of his banged hair, but the bang does not, or at least did not, constitute an individual of the species, though perhaps at the present time it may be regarded as typical. No satisfactory etymological derivation of the term 'Dude' has as yet been suggested by the philologists, but it appeals to a subtile sense of harmony when used in reference to the live specimens whose chief habitat is the west sidewalk of Fifth Avenue during the late afternoon hours. The dude possesses in his outward appearance and bearing all the attributes of a gentleman, excepting, perhaps, that of manliness. His dress is unostentatious in its perfection, its only loud notes being a pair of white gaiters, which are believed to be going out already in obedience to the unwritten code of dudeism. Why the dude feels any interest in life is not clear—he does not look as if he enjoyed it. There is a certain introspective earnestness in his bearing that reminds one of the theological student, and perhaps the prevailing high collar strengthens the resemblance. To say that the dude is offensively supercilious would do him injustice, for superciliousness implies a certain conspicuity out of tone with the eternal verities of his creed. That he is intensely supercilious is probably true; but his superiority to the multitude lies in the fact that he holds all distinguishing marks of his rank strictly in abeyance. The dude is young now, and his advancing years will be watched with curiosity by an anxious public. It is now held by high authority that he must be under twenty-five years of age. What he will be after passing that limit, time alone can show. Let us hope that he will be as harmless then as he apparently is now."

TAKE MORE EXERCISE.—*Scene:* Office of a pompous doctor who knows it all. Enter a tired man, who drops into a seat, and says that he wants treatment. The doctor puts on his eye-glasses, looks at the man's tongue, feels his pulse, sounds his chest, and then draws up to his full height and says: "Same old story, my friend. Men can't live without fresh air. No use trying it. I could make myself a corpse, like you are doing by degrees, if I sat down in my office and didn't stir. You must have fresh air; you must take long walks, and brace up by staying outdoors. Now, I could make a drug-store of you, and you would think I was a smart man, but my advice to you is to walk, walk, walk."

Patient. But, doctor——

Doctor. That's right. Argue the question. That's my reward. Of course you know all about my business. Now, will you take my advice? Take long walks every day, several times a day, and get your blood in circulation.

Patient. I do walk, doctor. I——

Doctor. Of course you walk. I know that; but walk more. Walk ten times as much as you do now. That will cure you.

Patient. But my business——

Doctor. Of course your business prevents it. Change your business, so that you will have to walk more. What is your business?

Patient. I am a letter-carrier.

Doctor (*paralyzed*). My friend, permit me to once more examine your tongue.—*Sun.*

CONTAGIOUS DISEASES IN PARIS.

[From our Special Correspondent].

THE number of Americans visiting Europe is likely yearly to increase, with the improvements made in the means of communication. Nevertheless, the journey is an arduous undertaking, and but few persons would care to travel so far unless they were able to devote several months to visiting places of interest on the other side of the Atlantic. Whatever, therefore, may be the sanitary advantages or disadvantages of European life, the American visitor generally remains absent from his home long enough to experience the effects of this change of influence.

European sanitation may consequently be considered not merely as a question of theoretical interest, but as having a practical bearing on the life and health of thousands of foreigners. The importance of this fact has unfortunately been brought home to many American families during the recent typhoid epidemic which in the course of the year 1882 wrought such havoc among strangers in Paris.

England, it is true, may compare favorably with the United States from a sanitary point of view, but it does not offer the same attractions as the European continent to the foreign visitor and pleasure-seeker. London — in spite of its vast commercial, historical, and political interest and importance—is but a sorry, murky, muddy, gloomy place when contrasted with the brilliancy, the gayety, the aspect of general contentment and enjoyment that bewilder the gaze of the stranger as he takes his first stroll along the Paris boulevards. It, therefore, only proves a keen and just sense of appreciation on the part of the American-European colony, when we note that the immense majority live in Paris in preference to London. Yet there is at least one weighty objection that must be raised against this preference—the risk to life and health is much greater in Paris than in London, while the difference between continental and English rural, seaside, and general health resorts is still more in favor of the latter.

In England the death-rate is almost invariably lower; and, what is more to the point, the presence of zymotic disease not so general.

The sanitary legislation of France is a good half century behind that of England; for instance, disinfection and isolation in cases of contagious fevers are not enforced and very rarely practiced. In the matter of drainage the state of affairs is still worse. But few French medical men have any knowledge as to the nature or danger of sewer gas. At most they recognize that a bad smell is

not wholesome; although many doctors, especially provincial practitioners, seem to think that bad smells are an inherent and inevitable concomitant of human existence.

In all this but little improvement will ever be achieved till the capital of France has set the example; and, so far as drainage is concerned, it is one of the principal sinners. As a natural result typhoid fever has become endemic in Paris, though it also occasionally bursts forth with epidemic violence. We find that the deaths from typhoid fever in Paris amounted to 903 in 1869, to 938 in 1872, to 953 in 1873, to 823 in 1874, to 1,048 in 1875, to 2,032 in 1876, to 1,201 in 1877, to 857 in 1878, to 1,001 in 1879, to 2,120 in 1880, to 2,133 in 1881; finally, last year the total deaths must have reached a little over 3,000—2,842 deaths from typhoid fever had already been registered by the 23d of November, 1882.

It will be noted from these figures, first, that the exceptional year of the war is omitted; that we may reckon on close to a thousand deaths from typhoid fever in Paris during ordinary times, while quickly returning epidemics raise this figure to two or three thousand. The tendency is not to diminish, but to increase; and this is even more noticeable with respect to the other leading zymotic diseases.

Dr. Brouardel, in the *Revue d'Hygiène*, of November, 1882, gives the following statistics:

MORTALITY PER 100,000 INHABITANTS OF PARIS:

	From 1869 *to* 1874.	*From* 1874 *to* 1879.	*From* 1879 *to* 1881.
Typhoid fever...	48.4	61.4	96.5
Diphtheria.....	53.6	88.8	101.3
Small-pox.....	11.4	17.2	74.8
Measles	30.3	37.5	43.3
Scarlet fever	7.2	4.6	18.1

Thus, in the period mentioned above, we have an annual death-rate from these five zymotic diseases rising from 1.51 per 1,000 of the population to 3.34 per 1,000. This is evidently due to no accidental circumstance, but the natural result of those sanitary evils against which it is our present purpose to protest.

What, in a few words, is the system of drainage extant in Paris? Formerly it was of a uniform description, and, as such, was perhaps preferable; for now we have the disadvantages of several systems and none of their advantages. Formerly each closet drained into a cess-pool situated under the back yard, and not unfrequently under the house itself. There was no water in the closets. Dire were the penalties that awaited the householder who threw slops down the pipe; and, in the rare instances where something approaching to cleanliness could be enjoyed, it was obtained by the active use of a brush and a little clean water brought in a jug. Of course there were no traps. What could have been the use of them without water? and the gas generated in the cess-pool and the pipes had no difficulty in gaining access into the dwellings. The law orders, however, that each cess-pool shall have a ventilating pipe from its summit to the roof of the house: but the sewer gas would naturally prefer the closet pipes, where the heat of the interior of the houses acts as an attractive power. However bad all this may be, it had at least one great advantage—the house only absorbed the emanations of its own cesspool; and, if this could be kept free from the introduction of specific germs, a certain amount of immunity from zymotic disease was enjoyed.

With regard to the slops, kitchen and vegetable water, these were thrown into special receptacles, which, joining the water-spouts, found their way to an open gutter in front of the house. This gutter, to save appearances, was protected by a perforated iron covering, led to the street gutter, and then to the sewer. Hence the connection between the house and the sewers was completely broken off, and the sewers themselves did not receive any human dejecta whatever; nor could the sewers help to carry from quarter to quarter the germs of disease. Finally—and this is a matter of some financial im-

portance—the contents of the cess-pools were of a very concentrated and therefore valuable description and the trade in human guano an important source of revenue.

As matters now stand, however, Paris is suffering from all the inconveniences of an experimental stage of transition. In some quarters, what is known as the *système diviseur* has been introduced. This consists of an iron barrel, which is supposed to retain all the solids and allows the liquids to escape to the sewers. Of course these liquids contain, in solution or suspension, all the dangerous properties and the specific germs of the sewage which formerly was carried solely to the cess-pools. As the number of these *tinnettes filtres*, as they are called, is estimated at several thousand, the sewers of Paris are now far more dangerous than they used to be. But as the danger of the sewers increased, the authorities, with singular lack of foresight, have been busily engaged in placing the waste water pipes in direct communication with them. It is a repetition of the old error, that external cleanliness means real cleanliness; a mere unscientific attempt to keep up appearances. Of course it was not very pleasant to see soap-suds sailing down the gutter, or to detect by the odor emanating from the water-spout the precise nature of the vegetables that had just been cooked within the house. Yet, these inconveniences were not very perceptible in the rush of people and of objects that crowd the thoroughfares of a great city. In any case, anything is preferable to placing the interior of the houses in direct communication with the interior of the sewers. But, for the sake of keeping up appearances, this is precisely what has been done, especially in fashionable quarters and in new and high-class houses. The pipe of the kitchen sink, the pipe that communicates with the receptacle for house-slops, the pipes from the lavatories, and even the pipe that brings the rain from the roof of the house, are all joined together at the basis of the house and conducted underground to the sewer. There is not a trap, not a siphon anywhere to arrest the ascension of sewer gas, which is naturally drawn up these pipes by their higher elevation and temperature. As for such admirable and ingenious inventions as the American contrivance, the Bower trap, they are utterly unknown in France. The most modern pipe which communicates from the sewer to the base of the house is made of cast-iron. Its mouth assumes the form of a spoon, which is supposed to retain a little water; but, inasmuch as there is no dip across the base of the spoon, there is always space for the air to pass between the water and the roof of the pipe.

The waste pipes must, it has been demonstrated, be considered as a constant source of danger. They convey to the houses the gas from the sewers, and this gas is daily becoming more foul as the number of *tinnettes filtres* is increased and the number and length of the sewers and of the population augments without any proportionate increase in the water supply.

We visited a handsome modern house in the Boulevard Malesherbes, where a great number of American families board. Here no less than four cases of typhoid fever had occurred in rapid succession. The closets, like all French closets, were not trapped; but, as they drained into a *tinnette filtre* situated in the cellar, they had a constant water supply. The pans, however, are so arranged that they do not retain more than an inch deep of water, so that any effluvia from the *tinnette* would have no difficulty in entering the closet. The kitchen range was close to the sink where the dishes are washed up, and the heat from the fire very considerable. On applying a burning match to the mouth of the sink-pipe we found a decided upward draught, and, at the same time, we could not help noticing a whipped cream standing close at hand. This appetizing dish, fully exposed to the inrush of foul air, was literally washed with sewer gas previous to being served at table. Doubtless its flavor was not

modified, but we all know how promptly milk absorbs the specific germ of typhoid fever, and how many epidemics have been traced to a contaminated milk supply. That some of the American visitors boarding in this house should have fallen victims to the prevailing epidemic is, therefore, in nowise surprising. First it should be noticed that it is not the practice in France to disinfect the dejections of fever patients. These, in spite of the germs they contain, are thrown directly into the cess-pool or sewer, where the morbific principle may retain its vitality, grow, and multiply for an indefinite period. The sewer and cess-pool gas, from which French houses are utterly unprotected, are, therefore, more than usually dangerous.

The wonder under such circumstances is, that typhoid fever should not be more prevalent and disastrous; but this can be explained in a manner which, though satisfactory in itself, is particularly alarming to the foreign visitor. The fact is that the Parisian has been inured to the poison. From his earliest youth he has absorbed the germs of typhoid fever often with fatal, but not well-marked consequences. Some gastric derangement in early infancy has brought him to an untimely end. More frequently he has recovered. Perhaps he has suffered several times in his infancy from some ill-defined indisposition due to absorption of typhoid germs, which have ultimately acted as a vaccine—giving him, if not complete, at least partial immunity from the disease. This theory is not only generally believed, but appears to be demonstrated by the fact that during the recent epidemic by far the larger proportion of cases occurred among persons who were not natives of Paris—visitors and tourists, or workmen coming from rural districts in the hope of obtaining employment in the capital. Indeed, it is obvious that an American or an Englishman, accustomed to live all his life in a town where the drain pipes are trapped, sometimes ventilated—where the sewers are always ventilated and generally well-kept and cleaned, should feel evil consequences from the enormous amount of sewer gas he is compelled to absorb in every French town house.

In ordinary times, fortunately, this did not manifest itself by so grave a result as an outbreak of typhoid fever; though, on the other hand, there are very few young persons who have not suffered from a sharp attack of diarrhœa during the first week or so of their sojourn in Paris. Generally this is attributed to the light French wine, on account of its somewhat acrid flavor. But this is a great mistake, firstly, because water-drinkers suffer at least quite as frequently; and secondly, because the wine contains iron and tannin, and has, if anything, a constipating effect. The diarrhœa is simply one of those beneficent efforts of nature to relieve the body of the unaccustomed presence of microbes, either more numerous or different in their character to what the system has been in the habit of supporting.

Visitors to Paris are generally in a prosperous position, at least they have not suffered from hunger or any specially depressing circumstance. The proportion of invalids and of children is small; consequently the results of bad sanitation, though well-marked and defined, are not so fatal as would be the case if a mixed foreign population of poor and rich, with their children and infants, were exposed to the same dangers.

As a further proof that persons not accustomed to the bad sanitation of Paris are its first victims, we may mention the students of the Paris University. Some years ago a great many youths came direct from rural districts to Paris, and a distressing number fell victims to typhoid fever. Now, however, the health of the students has greatly improved in this respect, but they no longer come up to the University direct from the country. They first spend a few years studying in some large provincial towns, where they experience the evil effects of drainage as bad as that of Paris, and are, therefore, inured to the same or similar specific poisons.

It therefore behooves foreigners to raise their voices against this state of affairs. They run the greatest risks, and, by their lavish expenditure while in Paris, contribute largely to that public wealth from which the means to reform these evils must be derived.

Bad drainage, although the principal, is not the only cause of the increase of disease. The common lodging-houses have been overcrowded to an alarming extent during later years by the great number of provincial workmen who have come up to Paris. Again, the water supply is anything but satisfactory. The waters of the Vanne and the Dhuys are as good as any ever supplied to a large town; but the amount is insufficient, so that in many houses they are not drank at all. Then, even where this water is received, it occasionally falls short and other water is sent in its stead, and this without warning. In drinking water in Paris we are never absolutely certain whether it is the pure water of the Vanne or the Dhuys, or whether it is the more or less contaminated water of the Seine or the Canal d'Ourcy.

These evils are naturally not ignored, and there is now an earnest desire manifested to redeem Paris from its present disgraceful condition. Innumerable discussions have been held at the Academy of Medicine, by the Société de Medécine Publique et d'Hygiène Professionelle, by the Société Française d'Hygiène, and many other learned bodies. The Paris Municipal Council have appointed a Technical Committee to visit and report on the drainage of the principal towns of Europe, and, after inspecting the sewers of Brussels, they are now on their way to London. It is no easy matter, however, to decide what shall be done to remedy the existing state of affairs, and the solution of the problem will be watched with intense interest throughout the whole of the civilized world.

In 1880 there were 80,000 cess-pools in Paris, 17,000 *tinnettes filtres*, and 15,500 portable tubs or pails. As only 60,704 cess-pools were emptied during the year, close upon 10,000 cess-pools must have been allowed to stagnate for more than a year without cleaning.

The Paris sewers must not be judged by those magnificent underground aqueducts which foreigners are allowed to visit. These main sewers, particularly when illuminated, are very imposing; and what with the rattle of trucks, the rush of boats against the currents of water, the glitter of signal lights red and green, the echo of numerous voices, they seem more like some Venetian railway station than the medium for the removal of a city's filth. But even here the fall is insufficient, while in the by-streets and smaller sewers there is often no water at all, and only solid deposits which have to be removed by manual labor. No less than eight hundred workmen have to be constantly employed to clear or rather to push the solid matter forward toward the outfall. So unsuitable are these sewers for the carrying away of solid matter, that in some of the outlying districts it may take six weeks for a heavy substance to reach the outfall. Yet three days is the maximum delay that should be allowed. Hence the Paris sewers generate in large volume carbonic acid gas, sulphuretted hydrogen, marsh gas, ammonia, and various compounds of ammonia, which invade the streets and the houses. If to these in themselves dangerous elements the dejections of some two million people were added, it is impossible to calculate the extent of the mischief that would arise. Before there can be any question of abolishing cess-pools and draining direct into the sewer, the sewers of Paris must be entirely rebuilt. Further, as there is insufficient fall, numerous pumping stations must be established to raise the sewage to a higher level, and thus artificially create the required fall. Again, the water supply must be increased to a very large extent. All this will require an immense outlay. But there is something more which money can not procure and which is equally indispensable, and that is the education of the people in matters relating to hy-

giene. They must be taught how to protect their houses by siphons, interceptors, and ventilation from the ingress of sewer gas. This can only be accomplished in the course of time, and when the condition of the country will enable Frenchmen to turn their thoughts from purely political to more practical questions. Yet to wait till it is possible to apply successfully the English system of drainage to Paris is to condemn many thousand persons, and notably foreign visitors, to premature death.

Under such circumstances the very appropriate suggestions made by a French engineer—M. Berlier—are particularly welcome. M. Berlier proposes to act by pneumatic suction. Utilizing the sewers that actually exist, he would place in them strong though small iron pipes leading up to four pumping stations situated outside Paris. At each of these stations powerful steam engines would produce by pumping a vacuum in these iron pipes which would therefore suck up whatever liquid material might be introduced into these pipes. The difficulty is to insure that nothing hard, nothing likely to create an obstruction shall enter into these pipes. For this purpose an ingenious contrivance has been invented. Under each house, probably where the cess-pool once existed, are placed two iron cylinders capable of holding about fifty to sixty litres of liquid. The first is called "the receiver." In it descends the pipe from the closets, and in its center is a strong wire-work basket. By means of a crank and a handle that can be affixed from the outside a violent rotary motion is imparted to this basket. Should any hard substance, such as a brush or a stone, have fallen inside, the noise will denote its presence; the receiver can at once be opened and the object withdrawn. It will thus be impossible to lose or to conceal any insoluble substance by allowing it to fall down the drain pipes. On the other hand, all soluble substances dashed round by the force of the rotation imparted to the basket will be able to pass through its wire side and travel on in a sufficiently liquid state to the second cylinder, called "the evacuator." This apparatus contains a very large hollow egg-shaped floater. The point, armed by a vulcanite ball, fits tightly into the opening at the bottom of the cylinder which communicates with the pipes that travel along the sewers. The suction keeps the floater in its place, and the cylinder is tightly corked up. It is only when almost filled with water that the upward pressure of the floater in its efforts to float is strong enough to disengage it from the downward suction of the vacuum in the pipe. The suction then acts upon the liquid, draws it off rapidly, and the floater once more falls into its place. Thus the action is quite automatic; the pipes only convey liquid, and as this is mixed with a certain quantity of air, there is an ebullition produced that scours the sides of the pipes and keeps them perfectly clean. Nevertheless, and in case of accident, the pipes are connected with a sort of barometer placed at various points, which indicates the degree of pressure, and starts an electric bell when the pressure is either too great or insufficient. As the pipes are all in the sewers, they can be promptly visited and repaired.

This system is not merely a theory, a proposal—it has been carried into execution. A pumping station has been established at Levallois Perret, and iron pipes laid down as far as the Place de la Concorde, a distance of three and a half miles. Several private houses in the Boulevard Malesherbes, the Rue de la Bienfaisance, the Rue du Rocher, and the Rue de la Madelaine are drained in this manner; but the most important experiment is at the barracks of the Pépinière, where the latrines and cess-pools have been suppressed and the pneumatic system introduced for the benefit of a thousand soldiers. This has been working most satisfactorily for many months; and it must above all be noted that the barracks of the Pépinière are the only soldiers quarters in Paris where there was no case of typhoid fever during the late epidemic.

The first great advantage of this system is that there is no danger of gases entering houses, of drains leaking, nor is it necessary to ventilate into the street. The entire canalization must be absolutely air-tight, and the system ceases to work the very moment a leakage occurs. Repairs must at once be made. For Paris it is specially suitable, as it does not require either the reconstruction of the sewers—the question of fall being of comparatively small importance, nor any additional water supply—the motive power being the vacuum produced by the steam engines, and not the force of gravitation and the volume and rapidity of the rush of water. Again, as the system works automatically, it does not matter how ignorant householders may be of sanitary laws, they will not be called upon to protect themselves against sewer gases, as their houses will no longer be exposed to this poison. Finally, the manure of Paris will not be lost. It can be precipitated and converted into *poudrette*, or it can be pumped forward to any distance and then used for irrigation purposes. This latter is a very important consideration, now that the supplies of phosphates are falling off and the future of agriculture is menaced.

Financially, it is proposed to carry out the scheme by imposing an annual tax of twelve dollars for each house, and this would be less than the actual cost of emptying cess-pools, etc. The receipts thus raised would suffice to pay working costs, interest on capital, and gradual amortization. Each receiver would be visited once a week and a rotary motion imparted to the basket; and, beyond this, no further trouble would be necessary, all might work by itself. The only precaution the public need take is that of pouring sufficient water down to insure the emptying of evacuator and receiver before they left their home for any length of time; otherwise the matter within might ferment during their absence. This is not so dangerous, however, as the ordinary traps, which, when not often used, admit sewer gas as soon as evaporation has lowered the level of the water and broken the seal it is supposed to establish.

Actually, there are 369,020 cubic metres of water supplied per day to the 2,239,928 inhabitants of Paris and its outskirts. This will be augmented to the extent of 140,000 cubic metres more when the works now agreed upon are completed, and is equal to 227 cubic metres per day per inhabitant; but barely a quarter of the amount is fit to drink. The sewers now in use measure more than 600,000 metres in length, and nearly 400,000 metres will have to be built to complete the communications throughout the city. The cost for these latter-mentioned sewers is estimated at $10,000,000. Then, when all is said and done, these sewers will not act properly, and the water that enters them does not suffice to maintain their cleanliness. The force of circumstances compels us, therefore, to look to some other solution of the difficulty, and M. Berlier's proposals are consequently likely to meet with general favor.

The reforming of the drainage system will not in itself, however, suffice to redeem the sanitary condition of Paris. The amount of pure drinking water must be augmented, and its use in all households rendered compulsory. The many unwholesome industries in the outskirts of Paris must be removed to a greater distance. The overcrowding of low lodging-houses requires immediate supervision. The notification of infectious diseases should be obligatory, and disinfection practiced immediately on recovery. Separate hospitals for infectious fevers have yet to be built, and the removal of patients who have not accommodation for isolation at home enforced by the police. These and many other measures at present entirely neglected have all to be introduced into France before that country can consider itself in harmony with modern sanitary science. Such reforms will not in any case be due to the initiative of Frenchmen. Other nations, especially America and England, will have led the way. It appertains to the

English press of both sides of the Atlantic to insist on their early realization. Paris is not merely the chief town of France—it is a cosmopolitan rendezvous, and must therefore be swayed to some extent by the force of foreign opinion. In this the French have not shown any national reluctance or prejudice. Their minds are open to progress, even when not of home growth.

In insisting on such measures as those briefly sketched above we are not giving unwelcome advice, but are only defending the cause of humanity and spreading abroad the truth of a science which the French themselves are the first to recognize as higher and nobler than all consideration of nationality, all prejudice of race, and destined to travel over the narrow limits of political frontiers.

ADOLPHE SMITH.

OFFENSIVE BREATH.

WHAT is more disagreeable than an offensive breath? Perhaps filthiness of person, which would produce an unpleasant odor and unpleasant appearances to the eye. But we are speaking more of persons of respectability who move in good society. It is not very uncommon for such people to have a breath so offensive as to make their near presence extremely disagreeable.

There may be several causes for this, but one of the more common is decayed teeth and the want of care respecting the cleansing of the mouth. And, singular as it may seem, one may have an offensive breath and not know it, and it is a subject on which friends are very reluctant to speak, so that one may have a bad breath for a year and all his friends be aware of it and he not know it.

Let us recommend to all persons the propriety of keeping the mouth clean. After each meal one should remove with a stick or quill-pick all loose particles of food from between the teeth, and rinse the mouth with water, using a soft brush at night and in the morning, and a little nice toilet soap on the brush is not objectionable. Nine out of ten who annoy their friends with bad breath might obviate it entirely by following these directions in regard to the mouth.

Sometimes persons have catarrh which gives unpleasant breath. Persons who eat pork and other greasy food in abundance and a great deal of sugar will be so charged with effete or waste material that, in Nature's effort to get rid of it, the breath will be charged with an offensive odor. When one eats onions or other offensive articles it is not from the stomach the odor comes when we smell the offensive breath, because the passage from the mouth to the stomach is always closed, but from the air passages of the lungs; the blood giving off the odor through the delicate structure of these parts. We need not wonder at this when we call to mind that the air cells of the lungs are estimated to contain a surface of *fifteen hundred square feet!* In fact, the lungs constitute one of the great outlets by which the system rids itself of unfriendly matters which find their way into the blood. When one eats the right kind of food in proper quantity, and the person exercises sufficiently, and, in all respects, lives according to hygienic law, his food will be digested and the effete matter eliminated in the normal way, but when it is the wrong kind of food, and the quantity is too great, every means of getting rid of it is employed by the system, the breath becomes loaded with the morbid matter, as also the skin, and the kidneys make efforts to dispose of it. If one pull up the wick of a lamp, three times as much oil is consumed as when it was properly adjusted, and the result is a long red blaze which gives but little light, and a fog of black smoke fills the air. This is unconsumed carbon; and, when one overeats, his system, in like manner, is overcharged with undi-

gested food; his lungs labor to dispose of anything taken into the system which is abnormal or unwholesome.

The execrable breath of the drunkard is unfortunately known to many who are obliged to come in contact with intemperate friends; a great quantity of alcohol loaded with effete matter is thrown off through the lungs. If one were to put his little finger into a vial of turpentine so that the finger would constitute a perfect stopper, his breath would indicate the presence of turpentine in less than five minutes. The finger would absorb it, it would get into the circulation, and be thrown off through the lungs.

What can we expect but a bad breath if we live improperly, if we eat bad food or drink spirituous liquors, or load our system with tobacco? It is said of the cannibals that they will not eat the flesh of a tobacco-chewer, it is so highly charged with the taste and odor of tobacco; and such medical students as do not chew or smoke are offended in the dissecting-room by the odor which emanates from the fresh subject on the dissecting-table who had been accustomed to the use of tobacco. Unfortunately, however, for morals and decency, three-quarters, if not nine-tenths, of the medical students use tobacco. We counted over fifty students smoking in the lecture-room of a New York medical college while waiting for the professor to come in and commence his lecture on "Toxicology, especially Narcotic Poisons," and in less than five minutes he dwelt upon the deleterious effects of the poison of tobacco.

With a clean mouth and healthy stomach, with proper food and drink, and a morning hand-bath, followed by a thorough rubbing with a coarse towel, there will be no necessity to complain of bad odors from the body or of bad breath.

TREATMENT OF THE HAIR.

PERFECT cleanliness is indispensable for the preservation of the health, beauty, and color of the hair, as well as its duration. This is attained by frequently washing it in tepid, soft water; using those soaps which have the smallest portion of alkali in their composition, as this substance renders the hair too dry, and, by depriving it of its moist coloring matter, impairs at once its strength and beauty.

After washing, the hair should be immediately and thoroughly dried; and, when the towel has ceased to imbibe moisture, brushed constantly in the sun or before a fire until its lightness and elasticity is fully restored; and, in dressing it, a little marrow pomatum, bear's grease, or fragrant oil may be used.

The belief that washing the head induces catarrh or headache or injures the hair is erroneous, as the application of water to the skin is the most natural and effective method of cleansing it and of keeping open the pores, through which the perspiration must pass in order to insure its healthy condition. Besides, scales naturally form around the roots of the hair of the most cleanly person, and these can only be completely detached by the use of soap. The constant and persevering use of the brush is a great means of beautifying the hair, rendering it glossy and elastic and encouraging a disposition to curl. The brush produces further advantages in propelling and calling into action the contents of the numerous vessels and pores which are interspersed over the whole surface of the head, and furnish vigor and nourishment to the hair. Five minutes at least every morning and evening should be devoted to this purpose; and, if these rules be abided by, there will be no scurf in the hair.

Hair, the universal vanity, has been seized upon universally by the quacks; it has proved to them the true Golden

Fleece. Science, as though such a subject were beneath its attention, has left the care of the most beautiful ornament of the body in the hands of charlatans. Only two or three scientific persons have ever treated at any length of the hair, or have shown by the light of physiology what art is capable of doing and what it is powerless to do in cases of diseases of the skin.

Prof. A. R. Robinson has given us the best information regarding the diseases of the hair, in his paper read before the Alumni Association at Bellevue Hospital Medical College on Sycosis (Barbers' Itch), treating the hair from its infancy. Those who understand how the hair is nourished can but smile at the monstrous gullibility of the public in putting such faith in the puffs and extracts of the hair-restorers. Really, the old joke of the power of a certain preparation to restore the bald places in hair trunks and in worn-out furs has become a popular belief.

There is one fact that everybody should know, and which would be sufficient to rout at once all the trash with which people load their heads. The blood is the only regenerator of the hair; oils and pomades may for a time moisten and clog the hair, but over its growth or nourishment they are absolutely powerless. The fine network of vessels on which the bulbs of the hair rest is alone capable of maintaining its healthy existence. To a sluggishness in the capillary circulation baldness is mainly due. When this sluggishness is the result of a general failure of the system consequent upon age, no art will avail—the inevitable Delilah proceeds unchallenged with her noiseless shears. When, on the contrary, baldness proceeds from any temporary cause—when the bulb still remains intact—slight friction with a rough towel or a brush, aided by some irritating pomade, is the only course to be pursued.

WM. JOHNSON, M.D.

NOTES IN SCIENCE AND AGRICULTURE.

The Southern Exposition at LOUISVILLE, KY.—We heartily desire success for this large undertaking, and have little doubt that it will prove of widespread benefit in the North as well as in the South. Its projectors were impelled by the leading idea of bringing the attention of the world to the vast natural products of the South, and furnishing the Southern people a convenient opportunity for examining all the modern improvements in machinery that might help to enhance the value of the products which nature had so bountifully bestowed upon them; but the Northern and Eastern people of the United States lost no time in taking hold of the project, and even before the necessary arrangements were completed for receiving applications for space, began applying for the privilege of exhibiting in such numbers that the success of the undertaking as an exhibition was immediately assured. The Southern people, not so well prepared for prompt action in such matters, and not so well schooled in the benefits of occasions of this kind, were slower in responding; but the last few weeks have brought about a marked change in the relations of the Southern States to the Southern Exposition, and there is every assurance now that the South will present herself in a manner never before attempted.

Commissioners appointed by the Governors of the Southern States are actively engaged in arranging exhibits that will justify the pretensions of their respective States to be classed among the most inviting fields of America. The Governor of Arkansas has declared in his proclamation that "the importance to the State of being properly represented at the exposition can not be overestimated," and that "every Southern State will be represented and will make a display of its products, and visitors will attend from every section of the Union." The commissioners appointed under authority of the Arkansas Legislature have followed the proclamation of the Governor with an address, declaring that the Southern Exposition "is to be the grandest advertisement of the resources of the several States of our Union that has been witnessed upon this continent, except, perhaps, the Centennial at Philadelphia," and that "all the States of the Union will avail themselves of the opportunity, and never in our history has there been such an opportunity."

The development of this spirit of emulation among the Southern people gives welcome assurance of the consummation of the entire project of the Southern Exposition. The North has already responded, and the only question in that connection affecting the managers of the exhibition is the already serious problem of finding room for all the valuable and interesting exhibits that are

asking space in the machinery department. All anxiety that might have existed a few weeks ago, as to the ability of the South to fill out her part in this great array, has been relieved by the recent activity and earnestness of the Southern States.

What to do in a Tornado.—The recent terrible cyclone which ravaged parts of Wisconsin, Missouri, and Illinois, furnishes excuse for publishing some advice given by Sergt. Finley, Signal officer at Kansas City, Mo., with regard to precautions against tornadoes. At the same time he intimates the tremendous power of such a visitation:

"The inhabitants of a tornado-frequented district must be watchful in the season of visitations, for he can never know when the destruction will come upon him. On the first sign of the approaching vortex, he must run—always to the north, unless by going in that direction he will have to cross the entire path of the storm. If he is nearer to the southern edge than to the center of the probable path, he may go south, bearing slightly east; but in no event should he ever run directly to the east or north-east. It is impossible to save any building that may lie in the path of the tornado, or any property that can not be got out of its way. No material, no method of construction can be competent to resist the raging destruction. Nothing rising above the ground can escape it. The most practical measure of precaution is to construct a 'dug-out' at some suitable point, within easy distance from the house, to serve as a place of refuge or shelter. The retreat should be entirely underground, with a roof at least three feet thick, not rising above the surface of the earth, and entered from the northern or eastern side. A 'cellar-cave' may be constructed from the cellar, if the house has one, to serve as a substitute for the 'dug-out.' It should be excavated from the west wall of the cellar, toward the west, and should be made as complete and secure as the 'dug-out.' If, however, the storm can not be escaped, if no refuge is at hand, or there is not time to get to it, the safest thing to do is to place one's self against the west wall of the cellar, face forward, or against the south wall, as near the south-west corner as possible. The north-east quarter is in any case a fatal position, and should always be avoided. If one is actually overtaken by the tornado, his only resource is to cast himself face downward upon the ground, with his head to the east and his arms thrown over his head to protect it. If a stump or large stone, or anything heavy that the wind will not blow over, is near, he may get a trifle of protection by throwing himself to the eastward of it. If in a house with no cellar, he should get into the west room, on the ground-floor if possible, and away from all stoves and heavy furniture."

The Cable Railway on the Brooklyn Bridge.—Under the Brooklyn approach to the great East River Bridge are two horizontal engines, of 300 horse-power each, with 26-inch cylinder and 48-inch stroke. They are connected directly with a small drum, four feet in diameter. To the driving drums a wire rope is attached, which is turned two or three times about the drum, and passed through a small square well-hole to the railway on the bridge, which at this point is elevated. Here two large wheels, supported by standards, receive it. The rope then runs to a point on the bridge at the New York side, and passes about another receiving wheel, and so back to the first drum. A boiler house, on the Brooklyn side, and its tall chimney, is a conspicuous object. Here are four boilers to supply steam for the engines. The cars for the railway are attached to the continuous rope by means of a clutch or grip, the invention of Colonel Paine. This clutch is used to catch the running rope gradually, and regulate the speed of the cars, which would otherwise start off at too rapid a rate. A brake on the car controls the clutch, on the same principle as an ordinary brake controls a railway car.

Genesis of a New World.—"On a beautiful summer's night, August 22, 1794, Jerome and Lefrançais de Lalande noticed a star in Aquarius, which they estimated of the 7½ magnitude. Six years later they thought it of the 8 magnitude. In appearance it resembles a star which is not exactly in the focus of the telescope. Herschel had observed it in September, 1782, and recorded it as an admirable planetary nebula, very brilliant, small and elliptical. Lord Rosse and Lassell perceived that it was surrounded by a ring, which gives it somewhat the appearance of Saturn. The spectroscopic observations of Huggins indicate that it is a gaseous mass, in which nitrogen and hydrogen predominate. Most of the other planetary and annular nebulæ give similar results. In 1871 and 1872 Brunnow, the Irish Astronomer-Royal, measured its parallax and concluded that its distance is more than 404,000 times as great as that of the sun, and its diameter is probably greater than that of the entire solar system. This would make its volume more than 338,896,800,000,000,000 times as great as that of the earth. We have thus before our eyes a new system, which is probably undergoing the process of condensation through which our sun and its attendant planets passed hundreds of millions of years ago."—*L'Astronomie.*

Decay of Building Stone.—Dr. A. A. Julien, in a paper read before the New York Academy of Science, gave some results of observations on this important subject:

"The principle that stones are more lasting when laid on bed is clearly demonstrated in the case of all the building stones. After a structure has been erected a few years, there is no difficulty in dividing the stones laid on bed from those laid on edge, as the laminations in the latter become distinctly marked; and in some kinds this can be discovered

immediately after completion, as the more porous layers dry first, thereby giving the stone a striped appearance. In brownstone a deep decomposition was noted even when laid on bed; when exposed to the heat of the sun, the change is more rapid. The attack of the destroying agents is favored by imperfect jointing, which opens a back entrance. The discoloration in Nova Scotia sandstone might be prevented if the surfaces were vertical and placed out of reach of dripping. It is too soft for lower portions of buildings, and receives and retains the street dust. Ohio sandstone resists our climate well, and when used in Western cities is discolored, but not disintegrated. There are but few limestones in the city, and the decay of Westminster Abbey, London, should warn us of the danger of using fine-grained limestone until we are satisfied of its durability in this climate. The decay of marble is first shown by its becoming pitted; those set on edge show the more rapid decay. Granite shows pitting, the hornblende being first attacked. The south and west sides of the Tombs show decay, while the other sides are intact. The sides affected are exposed to the sun's rays."

Dr. Julien had concluded in regard to the life of stones, defining life as the period during which the stone presented a smooth appearance. Coarse brownstone, best used out of the sun, from five to fifteen years. Laminated fine brownstone, from twenty-five to fifty years. Compact fine brownstone, from one to two centuries. Nova Scotia stone will probably last from fifty to one hundred years. Ohio sandstone, the best of the sandstones, one hundred years. Caen stone, from thirty-five to forty years. Coarse dolomite marble, forty years; fine marble, sixty years; pure calcareous marble, from fifty to one hundred years. Granite, from seventy-five to two hundred years, according to variety.

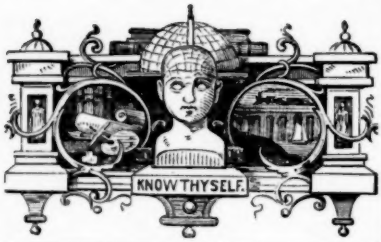
Bluestone is as yet untried, but will prove a good building material. Some of the best building stones in this country have not yet been brought to this city.

Some of the causes that produce decay in stones are, first, solutions and hydrations of the stone and the heat of the sun.

A Prehistoric Cemetery.—According to the *Pioneer*, a Far-West newspaper, there is an old cemetery two miles from Mandan, on the bluffs near the junction of the Hart and Missouri Rivers, which is fully 100 acres in extent, and filled with bones of a giant race. The ground has the appearance of having been filled with trenches piled full of dead bodies, both man and beast, and covered with several feet of earth. In many places mounds from eight to ten feet high, and some of them one hundred feet or more in length, have been thrown up, and are filled with bones, broken pottery, vases of various bright-colored flint and agates. The pottery is of a dark material, beautifully decorated, delicate in finish, and as light as wood, showing the work of a people skilled in the arts, and possessed of a high state of civilization. This has evidently been a grand battlefield, where thousands of men and horses have fallen. Nothing like a systematic or intelligent exploration has been made, as only little holes two or three feet in depth have been dug in some of the mounds, but many parts of the anatomy of man and beast, and beautiful specimens of broken pottery and other curiosities, have been found in these feeble efforts at excavation. Five miles above Mandan, on the opposite side of the Missouri, is another vast cemetery, as yet unexplored. We asked an aged Indian what his people knew of these ancient graveyards. He answered: "Me know nothing about them. They were here before the red man."

Treatment of Stammering.—Mr. J. E. Suitterlin has for eight years conducted an institute in New York, for the cure of stuttering and stammering, with most satisfactory success. His system is philosophical and simple, and is based on the plainest common-sense principles. Excluding reliance on medical aids, it comprises chiefly careful drill of the vocal organs, and such mental discipline as will contribute to the object. In the first stage of treatment, the subject is not permitted to talk, except to practice his exercises, and to make such movements in speech as can be guided and observed by the teacher. During this time he is taught to consider himself, not a patient, but a student of speech. In the second stage, which is begun when enough has been done in the first, the pupil is encouraged to talk, for practice, at every opportunity, with a "legato" movement (as in music) and a strong accent. In the third stage he is allowed to talk more naturally, but in a studied manner; and in the fourth stage he is permitted to employ his normal way of speaking, but is by this time relieved from the impediment under which he formerly suffered. The psychic part of the treatment, which aims to divert the pupil's mind from himself and his troubles, is the most difficult, and, at the same time, the most essential part. The time required for success depends very largely, and, in fact, chiefly, on the mental constitution of the subject.

From this brief description of an effective method of treatment, the parent may gather the useful hint that, to remedy any incipient tendency in his child to stammer, he should exercise a mild and kind but firm ruling, suppress all irritability of temper, observe for the child all the laws of health, and be careful as to his own manner of talking and the patterns he may set for the child. The statistics collected and preserved by Mr. Suitterlin show that the stammering habit is contracted, with only very rare exceptions, between infancy and ten years of age."—*The Popular Science Monthly.*



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GREATNESS AND SMALL HEADS—ANOTHER *EX-PARTE* ASSERTION.

WE are indebted to some one for a copy of an Oregon weekly, in which is an extract alleged to be quoted from some *Journal of Science*, in which the writer makes a remarkably weak attempt to discredit the well-known principle, that "size is the measure of power." It is altogether likely that the said *Journal of Science* copied the extract or article of which it forms a part, from some other publication, as we have seen it in two or three of our miscellaneous exchanges, with mention of a foreign derivation.

We are informed by the writer of the article, that "the theory that men of great intellectual powers have large and massive heads, is not borne out by facts." And he goes on to say, "A receding forehead is mostly condemned," although "found in Alexander the Great, Frederick the Great, and one of the portraits of Carlyle." He tells us that "other great men have had (*sic*) positively small heads. Lord Byron's was 'remarkably small,' as were those of Lord Bacon and Cosmo di Medici. Men of genius of ancient times have only what may be called an ordinary or every-day forehead," etc. He goes on to mention persons of whom there are probably no data extant worth consideration in respect to the proportions of their heads, but in an arrogant, fribbling manner, which no true scientific inquirer ever assumes, pronounces judgment upon them. His inference of small size appears to be derived mainly from an appearance of low or receding forehead which is given to their alleged portraits, as found on canvas, medallions, intaglios, coins, busts, etc.

Now, it seems to us scarcely worth the time it takes to notice such an off-hand, irresponsible statement, but as our attention has been called to other paragraphs embodying similar views which have somehow obtained admission to the columns of a few respectable papers, we venture a comment or two. We say, first, that the statements generally, are not to be credited, because they do not furnish the measurements essential to a correct judgment of the size of a head, viz.: they do not give the circumference, length, breadth, and height, but for the most part speak of it as "small" or "remarkably small," or "of inferior size." The only way to obtain a realizing sense of the proportions of a head is to measure it with calipers and tape-line. A head viewed in front may appear small, owing to the configuration of the face or the disposition of the hair; yet, when examined by rule, be found of very respectable dimensions. Voltaire's head appeared small; William Pitt's appeared small; Ruskin's appears small, because the features of the face are feminine, and the brow is prominent over the eyes; yet the actual circumference of the heads ranges from twenty two to twenty-three inches.

In the second place, it should be noted that while the circumference is generally taken as a standard for comparison, it does, by no means, indicate volume. A head may be very fully developed at the line of such measurement, but very low in the crown; or it may be very narrow or depressed at the sides, and rise to a great height in the crown; or it may be very broad and comparatively short, or the reverse. In the third place, to judge of the character of a person, observation must be taken of several features of organization that are of higher importance than the head's circumference, among them those of form, special development, and temperament. One hundred heads may be twenty-three inches in circumference, yet differ much, one from another, in contour, no two being similar. There may be variations of from a quarter to one and a half inches in length and breadth and height; besides variations in the projection of the forehead, occiput, crown, lower side-head, upper side-head, temporal region, etc.

Twenty-three inches is a large measurement, yet the head having such circumference may be poorly developed in the frontal lobes or the intellectual region, and the person exhibit a low order of mind. One having a head measuring twenty-two inches, like Ruskin's, for instance, may possess a long, narrow, and high cranium, the intellectual region monopolizing a large proportion of the measure, while the parts neighboring the ear and the occiput, which relate to feeling, force, and passion, are comparatively small; and having a very active temperament, he may exhibit powers of intellectual apprehension much above the average.

But the writer we have quoted from the *Journal of Science* has impeached one of the canons of Phrenology and physiology in saying that facts do not support the theory that men of great intellectual powers have large and massive heads. On the shelves of the Phrenological Institute stands a multitude of casts in plaster of paris, taken from the heads of eminent statesmen, writers, scientists, etc., all of which, when tested by measurement, are above average size. For instance, John Quincy Adams measures twenty-three and a half inches in circumference, and is high in the crown: Sir Walter Scott is twenty-three inches, and of extraordinary height. The three or four casts of the great Scottish novelist, representing him as he appeared at different ages, and which are preserved in the Phrenological Museum in Edinburgh, are all marked by this peculiarity of great elevation. William Pitt, twenty-three inches; yet the fine womanly features give the head an appearance of smallness when but casually observed. La Place, the eminent mathematician, twenty-two and three-quarters inches. Dr. Chalmers had an immense head, broad, long, and full in the crown, which must have been, in life, about twenty-four inches. Napoleon's head was remarkably large; though a writer, having a small head, recently stated that Napoleon's head was small. O'Connell, the Irish "liberator," had over twenty-three inches. The casts of Webster, Calhoun, and Lincoln, taken carefully by Mr. Clark Mills, measure respectively twenty-four and a half, twenty-three and one-quarter, and twenty-three inches. Thomas H. Benton is twenty-three inches; Bismarck has an immense head; Mr. Gladstone's is by no means small, nor is John Bright's, and so on to the end of the chapter.

We are informed that the head of By-

ron was "very small," and in the way of proof it is said that his hat was found to be too small for the heads of a number of gentlemen in whose company he happened to be. Judging from what has been disclosed of the character of Byron from childhood up, he possessed a head whose development was strong in the base and lower occipital region. He was passionate, willful, imperious, and irritable; at the same time the perceptive faculties were dominant in his intellect—a fact which, taken with his very acute nervous sensibility, rendered him quickly apprehensive of anything occurring within the range of his observation. The major development of his brain and head was probably below the line where Byron wore his hat, so that the size of his hat did not fairly represent the circumference of the head. Men do not wear their hats alike; some like them high up, others low down, almost to the ears. Perhaps the majority wear their hats set at a line about two inches above the opening of the ear, and those who are conversant with the structure of the cranium will at once agree that in these two inches one-half of the brain mass is included; and in those persons who have prominent brows and large temporal and occipital lobes, the circumference below the hat, or at a line passing just above the ears and over the supra-orbitar ridges, may exceed the circumference at the line where the hat is worn by an inch or more. The portraits of Byron extant show a head of the conical type, prominent at the brows, high at the crown, broad between the ears, full in the temples, and his known character indicates that it was depressed in the mid-lateral space, or the region of Caution and Secretiveness.

The head of Washington is mentioned by the writer of the quoted paragraphs in the *Journal of Science* as "small." In answer to this we would merely remark that the cast of the head of Washington taken by Houdon is in the city of New York, and can be studied by every lover of truth, and this cast shows that his head was of more than full size, or about twenty-two and a half inches. In anticipation of the assertion of some *smart*, small-brained writer that the late Governor Alexander H. Stephens had a "very small head," we publish the following correspondence:

"NEW YORK, June 7, 1871.

"HON. ALEXANDER H. STEPHENS:

"DEAR SIR:—Some men in Europe and America seem to take pleasure in asserting and trying to prove that Napoleon, Sir Walter Scott, Lord Byron, and other men of acknowledged ability, had small heads. Fortunately, in some instances where casts of the heads are extant, a solid contradiction to their statements can be interposed.

"We have frequently been asked to explain why Hon. Alexander H. Stephens has *such a small head*, when he is known to stand well among men of mental vigor. Having seen you often on the floor of Congress, we think your head is not small.

"We have no doubt that when Mr. Stephens shall have passed away, the class of persons referred to (who doubtless have small heads, and are anxious to show that they are in good company) will quote your head as small, after all chance for positive contradiction shall be beyond reach.

"Therefore, will you please obtain careful measurements of your head and body, and authenticate them with your own signature, so that we, or our successors, may be able to do the subject justice at the proper time.

"To wit: Height and weight of person, size of head, chest, waist, thigh, arm.

"Yours very truly,

"FOWLER & WELLS.

"Per N. SIZER."

As Mr. Stephens died on the 4th of March last, we feel at liberty to copy the following from his reply, and we shall preserve his autograph letter as a voucher and a souvenir:

REPLY.

"LIBERTY HALL, CRAWFORDSVILLE, Ga.,

"June 12, 1871.

"MESSRS. FOWLER & WELLS, New York:

"Your letter of the 7th inst., addressed to me at Augusta, Georgia, has just been received; it was

forwarded from Augusta to this, the place of my residence. I comply with your request. The facts, if you choose, you may use as you please, and you may rely upon them as correct. In height I am five feet ten inches; my head-measure on the line indicated by you is twenty-two and a quarter inches around; my waist measures twenty-four and a half inches; the measurement around the muscular part of the leg between the knee and ankle is nine and a half inches; the like measure of the muscular part of the thigh is eleven inches. The like measure of the muscular part of the arm is five and a half inches. My usual weight, without dress of any sort, before my recent affliction was eighty-nine pounds; it is now seventy-five pounds.

"Yours very respectfully,

"ALEXANDER H. STEPHENS."

It will be seen by the measurements given, that Mr. Stephens' physique was very slight, and therefore the skull and integuments must have been quite thin, so that 22¼ inches indicated a rather large brain, sufficient indeed for a man whose ordinary weight is 150 pounds, nearly twice as much as Mr. Stephens weighed. His quality of organization was very fine and also tenacious and enduring, as evinced by the amount of work he had done since he was fifty years old, and in spite of the fact that all that time, and more, he had been an invalid and frequently on the border of the grave, on the line between life and death.

THE EAST RIVER BRIDGE.

IT was most fitting that the opening of the great suspension bridge between New York and Brooklyn to the public, on the 24th of May, should be accompanied with special ceremonies. A stupendous monument to the genius and industry of man had been completed. A monument, not only to be viewed with admiration and awe by every beholder, but a monument for purposes of utility, a long-needed means of communication between two great cities. How much it was needed has been demonstrated already by the tens of thousands of pedestrians and the thousand vehicles of every description that cross it daily. On the day after the opening it is estimated that one hundred thousand people crossed on foot, and the stream of wagons and carriages was constant from earliest daylight till long after sunset. The cost of the bridge, over fifteen millions of dollars, seems colossal; but when a practical eye surveys the extent of the structure, its total length of nearly 6,000 feet, its massive towers of 274 feet, its span of 1,596 feet, its immense cables of the best steel wire, with the infinite complexity of the suspended structure, the long approaches of massive and beautiful masonry, with the numerous arches spanning a dozen streets, and the ample roadways, footways, with their entrances, and the commodious offices, waiting-rooms, etc., the cost seems, after all, not so much. Compare this tremendous work with a single building like the new State House at Albany, which is said to have cost upward of $15,000,000, or the Court House in New York City, which, under "ring" rule, absorbed $20,000,000, and it will appear a very moderate draught upon the people's money, especially when thirteen years have passed since the commencement of the work, and its progress in the earlier years was beset with many difficulties. A few years will demonstrate the wisdom of this investment by the two cities, the advantages flowing from its use will be found to be many times more valuable than the sum expressed by fifteen millions of dollars, and the success of one bridge will probably lead to the construction of others—over the Hudson, as well as over the East River.

It is pitiful that the bridge should have been the scene of such a horrible occur-

rence as that of the 30th of May, so soon after the opening. We may speak of what should have been done or what might have been done to prevent such a calamity; but when it is realized that a panic-stricken crowd is an ungovernable, reason-lost multitude—men who are transformed by terror into reckless, struggling animals—scarcely any precautions will be found preservative of the weak and helpless.

WHO WILL GET IT?—We notice, among recent bequests of money to educational institutions is a liberal one by the late Mr. Henry Seybert, of Philadelphia, for the endowment of a chair of mental and moral philosophy. We trust that the gentleman designated the kind of "mental and moral philosophy" he wished taught at his expense, and that it is not according to the old and impractical patterns which have been followed with passive routine the past hundred years. Young men and young women at college greatly need instruction in a living, vital, mental and moral philosophy applicable to their personal development and every-day practice. The dry, elaborate sophistry of the schools may give them a little practice in forensic hair-splitting, and start a vein of platitudinous speculation, but it evidently does not advance much the standard of morality in the educated strata of society.

We could suggest a name or two which we think would suitably apply to a professorship of mental science, and whose owner's teaching would be influential in opening the eyes of his students to the realities of life, and the intimate relation of material and mental things.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*

2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*

3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*

4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*

5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*

6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UN*available contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

ITCH.—C. W. T.—If you are troubled with this annoying malady, it is part of your treatment to be exceedingly careful in regard to your diet, eating little or nothing of that which heats or excites the blood or supplies the parasite with its normal food—broken-down tissue or effete matter which clogs the excretory ducts. You should bathe frequently, using tepid water, because it will soften the outer layer of the skin and uncover the hiding-places of the *acari*. Use soap somewhat freely over the affected places; there is no need of any drugs. A good diet and thorough cleanliness will be the best method of ridding the skin of the abomination. It is strange that your doctor should say that he could not do anything for it. We trust that your habits are not incorrigible.

QUESTION: Why do so many doctors disbelieve in Phrenology? I know that some of the ablest, such as Dr. Allen, believe in and advocate it, but others bitterly oppose it.

Answer: Dr. Allen studied Phrenology early in life, and became master of its facts and principles. In fact, he was the first editor of the AMERICAN PHRENOLOGICAL JOURNAL forty-five years ago. Doctors oppose Phrenology because they were not taught its principles in college, and some were taught by college professors their own prejudices. Every day we meet men of education who suppose we judge of development by *bumps*, when in point of fact there is not, and never has been, but one true method, that of the radial distance from the medulla oblongata, or brain center, to the location of the organs on the surface. Length of brain fiber from the top of the spinal cord tells the size of the organs. Whenever we show a doctor how we judge, he is astonished; yet we have been teaching it for nearly half a century, as Gall and Spurzheim taught it before; and notwithstanding this, doctors, ministers, and others who are intelligent on other subjects, insist on talking of bumps and the little irregularities of the surface of the skull as being phrenology. One man's head is smooth and two inches wider or higher than another's, just as the hind wheel of a wagon is larger than the forward wheel; yet it is not made larger by bumps, but by longer spokes or radial lines from the hub or center.

CURLY HAIR. — *Question:* Will you please to state through the JOURNAL what is the indication of character of one who has uncommonly curly and wiry hair, light brown, with sallow complexion and blue eyes? L. J. S.

Answer: Such hair indicates an impulsive, sprightly disposition, with a good deal of emphasis in the manner of expression. The person unites qualities of physique probably derived from both parents — a sanguine nature from his mother, and a good deal of endurance and personal assertion from his father. He is versatile in his tasks, fond of variety, and disinclined to undertake long jobs or enterprises which require patient watching and are developed into form and result by degrees.

MAGNETISM OR MESMERISM.—C. H. D. —It is claimed by those who have looked into the subject carefully, that the influence of magnetism is not injurious upon the subject, but rather imparts vigor to the nervous system. This we believe to be the case, when the magnetic power is exercised by an intelligent person, for a proper purpose. Of course harm could be done, but this only by the maliciously disposed. In its exercise the effect upon the operator need not be other than helpful in a nervous sense, although its excessive practice is exhaustive. We know persons of very active nervous temperament who possess unusual power in this respect, and who appear to derive personal benefit from its exercise.

JEALOUS DISPOSITION. — *Question:* I am jealous of all my acquaintances, and have no particular love for them. It is one of the greatest troubles of my life, for I can conquer other bad habits, but can not conquer this. Can you advise me what to do? C.

Answer: Try to think less of yourself, of your own wants and doings, and give attention more to the needs and life of other people from the side, not of curiosity or idle interest, but from motives of kindness, sympathy, and generosity. Study the lives of men and women distinguished for self-sacrifice and unselfishness. It would be well, too, did you take active part in some work of a benevolent sort. If you are connected with any church society, you can find something to do in that line, and thus have your mind occupied by matters exterior, so that you will have less time to consider "dear" self. If not related to any church, take up some branch of science or literature and pursue it resolutely in the hours of leisure. This will give you topics for thought and discussion, and help to develop your mind in useful directions.

J. H. T.—If you will obtain a good common-school education you might make a mark in the study of human nature and in reading character.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

HOW A MAN WAS BENEFITED BY AN EXAMINATION.—*Ed.* PHRENOLOGICAL JOURNAL: I recently met a middle-aged gentleman who is strong, large, and robust, with a good temperament and a large head, and in speaking of the great benefit which he had derived from a phrenological examination by Mr. Sizer, in the office of Fowler & Wells, he made the following statement:

"A few years since I came to Prof. Sizer for an examination and full written description of character, and before he finished the dictation to his shorthand writer, I felt impelled to interrupt him by saying that, while many things he said of me were quite true, some points he had stated were quite untrue. Mr. Sizer made no reply at the time, but went on with the examination as if nothing had been said by me. After he closed the dictation I repeated what I had stated, and he asked wherein I supposed he had

been mistaken. I replied he had given me large Language, whereas my friends would all say *this* was a great mistake; that I was no talker, and was the most reticent of men, and I *knew* I generally preferred to be silent. The examiner remarked: 'You may not have amounted to much as yet on account of a combination of developments acted upon by peculiar circumstances. In the first place, you have very large Approbativeness, making you exceedingly sensitive, and very large Cautiousness, inducing excessive fear. You shrink from criticism and censure, and you hesitate to take the place in life your talents qualify you to fill; then your large Secretiveness leads you to keep your thoughts and feelings secluded. When these three conditions unite they check your progress; and then your Self-esteem is too small to give you confidence, and your Combativeness is not large enough to give you force and courage. Thus you have failed to assert your rights, and have kept in the background, when with that large brain and strong body you ought to have been a man of influence and power.'

"This exposition of my peculiarities convinced me that he was right, and when he told me how to test the faculties and how to overcome the obstacles and weak points, I resolved to try.

"First, I tried to use the faculty of Language by talking with every one I could, and especially in reading aloud to others and alone, and found in a few weeks that I had gained such power of expression and facility of utterance, that people, seeing the change, began to regard me as insane. Then I tested the other points with satisfactory results, until I found myself a transformed man, and I am now so different my friends hardly know me, and are greatly surprised at the change. That phrenological description and chart, which I have tried to follow, have proved at once an inspiration and a guide, and I am now, and expect to be, *somebody* worth living and having a good place in the world."

MRS. H. W. BENTLEY.

PERSONAL.

GENERAL PORFIRIO DIAZ, ex-President of Mexico, who lately visited this country, is one of the most sagacious statesmen of the day. His administration of affairs during his Presidency was marked by many excellent reforms. The purpose of his late visit was to effect closer commercial relations between the United States and Mexico.

LYDIA PINKHAM, of patent-medicine fame, died of paralysis in May, at Lynn, Mass. She was born in Lynn sixty-four years ago. She has had several children, four of whom are dead. Not a remarkable example of the potency of her much-advertised mixtures.

MISS ABBIE PULSIFER, of Auburn, Maine, has been a reporter in the courts there for ten years. Other capable female shorthand writers are Miss Alice C. Nute, of Chicago; Miss Ingersoll, of Washington, D. C.; and Mrs. S. J. Barrows, of Boston, who reported in English a speech delivered in German. Shorthand is a fine employment for persevering young women.

THE MARQUIS OF LANSDOWNE, a man of reputation in State affairs, is to succeed Lord Lorne as Governor-General of Canada. He is expected to arrive at headquarters some time next October.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

ACT well at the moment, and you have performed a good to eternity.—LAVATER.

EMOTIONS are stars that guide only when the heavens are clear; but Reason is the magnetic needle that directs when stars are hidden and shine no more.—RICHTER.

WHEN our thoughts are born,
Though they be good and humble, one should mind
How they are reared, or some will go astray.
—JEAN INGELOW.

SAY nothing respecting yourself, either good, bad, or indifferent; nothing good, for that is vanity; nothing bad, for that is affectation; nothing indifferent, for that is silly.

THE refinements and elegancies of life are not to be despised; they are to be received with gratitude to Him who has provided them for our enjoyment, but their possession does not insure happiness.

"ANALYSIS," says Russell, "is the grand instrument in all the operations of the perceptive faculties; and of all the implements of science, it is the keenest in its edge, the truest in its action, and the surest in the results which it attains. It is the key to knowledge in all departments of intelligence."

THERE'S many a sorrow
Would vanish to-morrow,
Were we but willing to furnish the wings;
So sadly intruding,
And quietly brooding,
It hatches out all sorts of horrible things.

MAN and woman were made for, and not like, one another. One only "Right" we have to assert in common with mankind, and that is as much in our hands as theirs—the right of having something to do.—MRS. MULOCH-CRAIK.

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

ALCOHOLIC INEBRIETY, from a Medical Stand-point; with Cases from Clinical Records. By Joseph Parrish, M.D. 12mo, 185 pp., cloth. Price $1.25. Philadelphia: P. Blakiston, Son & Co.

This is a well-written and comprehensive book on the subject stated in the title. In the section entitled "The Crime View," the author aims to show how few of the crimes that fill our prisons and decorate our gibbets can be attributed to strong drink, except as it is used to nerve the arm, and harden the felonious intent already entertained. The drinking-habit is discussed by the author as a nervous disease, although at times the line between drinking as a disease and "a variation of natural functions having its source in the system itself," is slightly indistinct, as it well may be.

We would call particular attention to the two sections, "Hereditary Inebriates" and "Inebriety and Insanity," in which the treatment of the subject is clear and cogent, and the advice for the most part excellent. If any doubt is to be entertained on that score, it is with reference to the expediency of recommending the use of strong drink as a guard against insanity, although the author furnishes several cases in practice. Under the head of "How to Deal with Inebriates" are many suggestions of value regarding the care of inebriates that should be more widely known, not only by those in actual charge of such unfortunates, but also by the people at large. Whether in the hands of medical men or those who read for information generally, it is a book of peculiar merit, and will improve the general understanding of that so common, but nevertheless little understood vice —intemperance.

LADIES' GUIDE IN HEALTH AND DISEASE: Girlhood, Maidenhood, Wifehood, and Motherhood. By J. H. Kellogg, M.D., Member of the American Association of Science, American Public Health Association, etc. Illustrated. 8vo, 638 pp. Health Publishing Company: Battle Creek, Mich.

The success which has attended the publication of his "Handbook of Domestic Hygiene" has led Dr. Kellogg to compile a work expressly for women, in which systematic information is given concerning the special anatomy and physiology of the female body and its development from infancy to maturity. In the treatment of the ailments and infirmities of women, he not only draws upon the published experience of specialists and others, but from his own, which in its way is somewhat exceptional, being physician-in-charge of a large sanitarium, which is a constant resort for invalids suffering from every variety of disease. The basic principles of the treatment are hygienic, and, as in the case of other standard manuals of a similar nature, it is not intended that the advice supplied shall be "a substitute for the physician, except so far as the physician fails to do his duty in instructing his patient in relation to the nature, causes, and rationale of cure of her maladies, information to which every intelligent woman is entitled," and which the growing intelligence of the time demands shall be furnished in some way. The doctor who is prompt to commend a book of this kind to a patient, that she may the more intelligently follow his counsel, is more worthy of confidence than the practitioner who jealously keeps those with whom he has to deal in ignorance of the laws of their being, on the plea that it would do them more harm than good.

NATURAL CURE OF CONSUMPTION, Constipation, Bright's Disease, Neuralgia, Rheumatism, Colds (Fevers), etc.—The Origin, Prevention, and Removal of Disease. A Manual of Hygiene for Well and Sick. By C. E. PAGE, M.D., etc., author of "How to Feed the Baby," etc. 278 pp. 12mo, extra cloth. Price $1.00. New York: Fowler & Wells, Publishers, 753 Broadway.

"Is consumption curable?" is a question which—outside of nostrum-venders and charlatans, who have no scruples against lying for gain—has for the most part been answered in the negative; and a conviction to this effect lies in the minds of people. The local doctor, of whatever school or skill, is no more expected to cure consumption than to extend the average age of man to a round century. Indeed, if the patient recovers, it is declared throughout the community that the disease was not consumption after all, for, "if it had been, he would never have recovered!" While accepting this position, as regards invalids who shut themselves closely indoors and submit to medication, Dr. Page shows, by reference to the records of the dissecting-room, that partially-consumed lungs do often heal, and that many persons who never, perhaps, suspected the presence of the disease, have lived for many years with less than an entire pair of lungs. Even after one half of a lung has been destroyed, a perfect cicatrization of the tuberculous ulcers has taken place, and there has continued to be performed all the essential functions of the sound organ. "But," says our author, quoting Dr. Oswald, "in ninety-nine out of a hundred cases it will be found that the first improvement followed

[not upon a change of 'doctors,' nor the swallowing of an *irregular* nostrum, but] upon a change from a sedentary to an outdoor and active mode of life." He affirms the position that, given anything like *natural conditions*, such as it is the aim of this book to prescribe, "*pulmonary consumption*, in its earliest stages, is, perhaps, the most curable of all chronic diseases." A most remarkable case of self-cure, that of a young but determined girl, whose disease had passed to the "last stage," is given, and vouched for as a fact. The work is designed to illustrate specially the "*food and fresh-air cure*" for "*dyspeptic starvation*," which is Dr. Page's definition of the disease under consideration. In agreement with the most eminent physicians of all schools, the author holds that Bright's disease results from excessive or ill-conditioned diet; but stands quite alone in claiming that this, too, is a disorder which is readily amenable to "natural treatment." The consideration of the other diseases named is somewhat unique in character, the author maintaining that a strictly natural regimen is not only preventive, but curative of all disorders, so long as a restoration to health is possible; and this, too, at stages subsequent to what are, in general practice, held to be incurable. The book, therefore, is the work of a "radical"; and if, as we are led to hope, we have here a form of treatment that is *radically right*, a grand advance will have been made. The work, as a whole, will well repay a careful perusal, even by those who feel obliged to dissent from some of its conclusions.

PUBLICATIONS RECEIVED.

THE TENTH ANNUAL REPORT of the Managers of the State Lunatic Asylum at Utica, 1882. A very complete account of the management of the Asylum for the term specified. In this Institution there appears to be a systematic endeavor to trace to their sources in the physiology or pathology of patients the nature of their mental disturbances. The field which has been covered, and the results which have been obtained, are set forth in the Pathologist's report. By this it appears that *ante* and *post mortem* examinations, together with microscopic and chemical analyses, and micro-photographic illustrations and hand-drawings, have been executed in accordance with the plan devised years ago by the superintendent, Dr. Grey. Special care has been taken to work up in a scientific manner those cases which have terminated fatally.

Insanity is rarely an unmixed phenomenon; being either primarily or secondarily associated with symptoms which indicate disturbances of health, and generally an evidence of permanent disease in the brain, which is specially organized to exert a controlling power over the whole system.

MORAL AND LEGAL FORCE. By George Lansing Taylor, D.D. A strong argument for moral suasion as a means for the promotion of temperance, and also in behalf of employing legal means for the suppression of intemperance. Price, 10 cents. Published by the National Temperance Society, New York.

POPULAR SCIENCE MONTHLY, for June, 1883, contains a practical article on medical quacks and quackeries, in which these common incidents of modern civilization are distinctly set forth. Other articles worthy of attention are: The remedies of nature in relation to Consumption, Science-teaching in the Public Schools, Chemistry of Cookery, The Boundaries of Astronomy, Our Marriage and Divorce laws.

THE BIOGRAPHER is a new candidate for the attention of the reading public. Its publishers, of course, think that they supply a need, and it is certain that much interest is shown for the personal history of men of the time, and it is not likely that this new magazine, which will have for its special province the production of short sketches of notable persons, will lack a constituency. The character of the engravings could be improved in some respects.

THE RELATION OF EDUCATION TO WEALTH AND MORALITY, and to Pauperism and Crime, is the title of an address delivered by Mr. Dexter A. Hawkins, of New York City, before the Phi Beta Kappa Association of New York. It is an able presentation of the subject which now interests a large circle of educators. The author vigorously supports the view that universal education is the grand object to be sought in order to secure universal morality. The address is published by the author at 111 Broadway, New York.

MASTERY is a new weekly magazine, intended for young people. Possibly there is room for it, but we have long been impressed that the domain of juvenile literature is crammed. In fact, we would that there were fewer periodicals gotten up for children, as we think they exercise something of a disturbing influence upon young minds, more light, exciting, and superficial reading being supplied than they have time for. Between the numerous monthlies and weeklies, the big Sunday-school library books, and the ten-cent editions of all kinds of stories, boys and girls have scarcely any time to give to their more serious studies of the school and home, and to the more healthful recreations of the outdoor play-ground.

THE QUARTERLY ELOCUTIONIST, edited by Mrs. Anna Randall Diehl, contains readings, recitations, declamations, and dialogues, adapted to various occasions in school, parlor, and family. Its selections are generally good. Published by the Author, New York.